ES30TI Esprit®
with Thermal Imager

C1307M-C (8/07)

Contents

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Important Safety Instructions

1. Read these instructions.

2. Keep these instructions.

3. Heed all warnings.

4. Follow all instructions.

5. Do not block any ventilation openings. Install in accordance with the manufacturer's instructions.

6. Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.

7. Only use attachments/accessories specified by the manufacturer.

8. Use only with the cart, stand, tripod, bracket, or table specified by the manufacturer, or sold with the apparatus. When a cart is used, use caution when moving the cart/apparatus combination to avoid injury from tip-over.

9. Refer all servicing to qualified service personnel. Servicing is required when the apparatus has been damaged in any way, such as power-supply cord or plug is damaged, liquid has been spilled or objects have fallen into the apparatus, the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped.

10. Installation should be done only by qualified personnel and conform to all local codes.

11. Unless the unit is specifically marked as a NEMA Type 3, 3R, 3S, 4, 4X, 6, or 6P enclosure, it is designed for indoor use only and it must not be installed where exposed to rain and moisture.

12. Use only installation methods and materials capable of supporting four times the maximum specified load.

13. Use stainless steel hardware to fasten the mount to outdoor surfaces.

14. To prevent damage from water leakage when installing a mount outdoors on a roof or wall, apply sealant around the bolt holes between the mount and mounting surface.

15. AN ALL-POLE MAINS SWITCH with a contact separation of at least 3 mm in each pole shall be incorporated in the electrical installation of the building.

16. A readily accessible disconnect device shall be incorporated in the building installation wiring.

CAUTION: These servicing instructions are for use by qualified service personnel only. To reduce the risk of electric shock do not perform any servicing other that contained in the operating instructions unless you are qualified to do so.

Only use replacement parts recommended by Pelco.

After replacement/repair of this unit's electrical components, conduct a resistance measurement between the line and exposed parts to verify the exposed parts have not been connected to the line circuitry.

The product and/or manual may bear the following marks:

This symbol indicates that dangerous voltage constituting a risk of electric shock is present within this unit.

This symbol indicates that there are important operating and maintenance instructions in the literature accompanying this unit.

WARNING: HAZARDOUS MOVING PARTS. KEEP FINGERS AND OTHER BODY PARTS AWAY.

CAUTION:
RISK OF ELECTRIC SHOCK. DO NOT OPEN.

Regulatory Notices

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

RADIO AND TELEVISION INTERFERENCE

This equipment has been tested and found to comply with the limits of a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However there is no guarantee that the interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and the receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

You may also find helpful the following booklet, prepared by the FCC: "How to Identify and Resolve Radio-TV Interference Problems." This booklet is available from the U.S. Government Printing Office, Washington D.C. 20402.

Changes and Modifications not expressly approved by the manufacturer or registrant of this equipment can void your authority to operate this equipment under Federal Communications Commission's rules.

This Class B digital apparatus complies with Canadian ICES-003.

Cet appareil numérique de la classe B est conforme à la norme NMB-003 du Canada.

Description

The ES30TI Series combines the power of an advanced thermal imaging device with the precision of an Esprit® positioning system. At the core of the ES30TI is an uncooled, vanadium oxide microbolometer, long wave infrared (LWIR) camera. It delivers 320 x 240 thermal video with a pixel size of 38 micrometers and supports 2X digital zoom.

The ES30TI Series provides outstanding sensitivity below 40 mK. It is capable of multiple display formats, including white hot, black hot, and color signatures. The ES30TI is available with three different lens configurations (14.25 mm, 35 mm, and 50 mm focal lengths) for effective deployment in a wide range of applications.

MODELS

ES3014TI   14.25 mm, 50° horizontal field of view, f/1.3 lens with 2X digital zoom

ES3035TI   35 mm, 20° horizontal field of view, f/1.4 lens with 2X digital zoom

ES3050TI   50 mm, 14° horizontal field of view, f/2.0 lens with 2X digital zoom

Lens	Format	Pedestal Mount		Wall Mount	
		24 VAC	120/230 VAC	24 VAC	120/230 VAC
14.25 mm	NTSC	ES3014TI-2N	ES3014TI-5N	ES3014TI-2W	ES3014TI-5W
	NTSC 9 Hz	ES3014TI-2N-1	ES3014TI-5N-1	ES3014TI-2W-1	ES3014TI-5W-1
	PAL	ES3014TI-2N-X	ES3014TI-5N-X	ES3014TI-2W-X	ES3014TI-5W-X
	PAL 9 Hz	ES3014TI-2N-X-1	ES3014TI-5N-X-1	ES3014TI-2W-X-1	ES3014TI-5W-X-1
35 mm	NTSC	ES3035TI-2N	ES3035TI-5N	ES3035TI-2W	ES3035TI-5W
	NTSC 9 Hz	ES3035TI-2N-1	ES3035TI-5N-1	ES3035TI-2W-1	ES3035TI-5W-1
	PAL	ES3035TI-2N-X	ES3035TI-5N-X	ES3035TI-2W-X	ES3035TI-5W-X
	PAL 9 Hz	ES3035TI-2N-X-1	ES3035TI-5N-X-1	ES3035TI-2W-X-1	ES3035TI-5W-X-1
50 mm	NTSC	ES3050TI-2N	ES3050TI-5N	ES3050TI-2W	ES3050TI-5W
	NTSC 9 Hz	ES3050TI-2N-1	ES3050TI-5N-1	ES3050TI-2W-1	ES3050TI-5W-1
	PAL	ES3050TI-2N-X	ES3050TI-5N-X	ES3050TI-2W-X	ES3050TI-5W-X
	PAL 9 Hz	ES3050TI-2N-X-1	ES3050TI-5N-X-1	ES3050TI-2W-X-1	ES3050TI-5W-X-1

Installation

1. When installing the ES30TI Esprit system, allow for sufficient clearance between the top of the unit and overhead obstructions. This will prevent interference when the enclosure is driven to its maximum elevation of 33 degrees.

NOTE: Do not install the ES30TI behind a window or other glass. Otherwise, the unit will not operate properly.

A	16.3 (41.4)
B	8.5 (21.6)
C	7.1 (18.0)
D	4.2 (10.7)

NOTE: VALUES IN PARENTHESES ARE CENTIMETERS; ALL OTHERS ARE INCHES
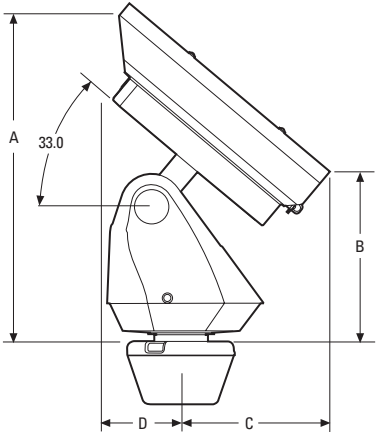
Figure 1. Esprit ES30TI System Clearances

2. Remove the transformer module from the base of the system by loosening the four Phillips screws and lifting the module.
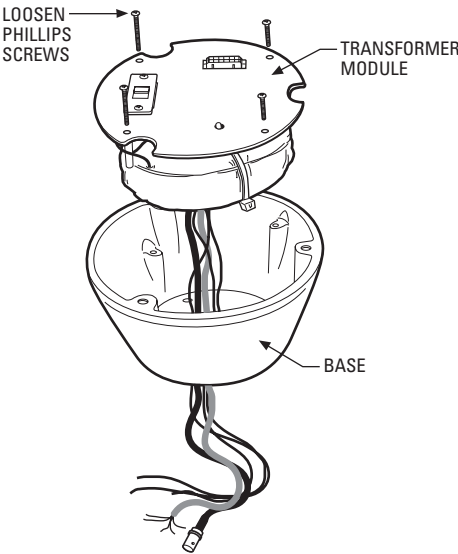
Figure 2. Removing the Transformer Module

3. Attach the base of the system to an Esprit mount (EWM or EPP) with the three flathead 10-32 x 1/2-inch screws and washers (supplied).
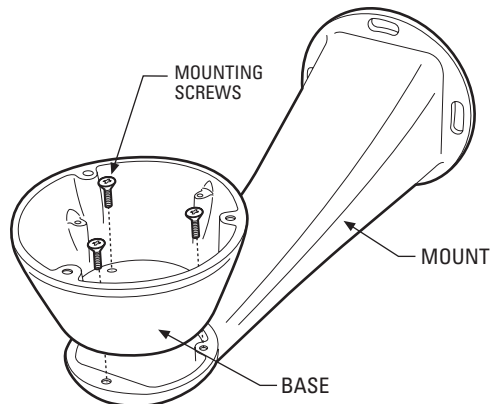
Figure 3. Attaching the Base

4. Route the wires and cables through the center of the Esprit mount. Reinstall the transformer module into the base. The transformer module can be positioned in the mount base in only one orientation.
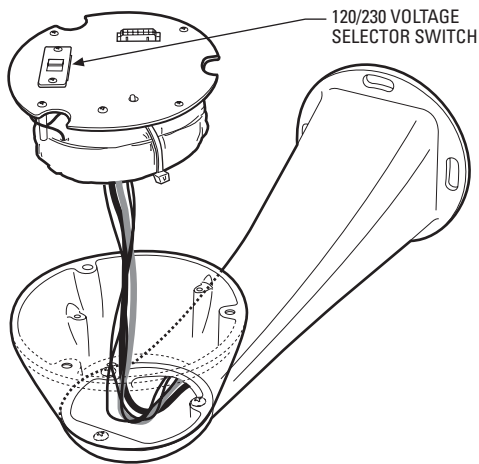
Figure 4. Routing Wires and Cables

5. *120/230 VAC models only:* Set the 120/230 voltage selector switch on the transformer to the appropriate voltage.

6. Connect wires and cables.

    a. Connect to AC power. Use the two supplied clamp connectors.

120/230 VAC	
Black wire	Input (AC Line)
White wire	AC Neutral
Green wire	Ground

24 VAC	
White wire	AC HI (HOT)
White wire	AC HI (NEUT)

    b. Connect the video coaxial cable to the BNC connector.

c. Connect the wiring for a 2-wire or 4-wire control system. This step does not apply to Coaxitron® control systems.

Green wire	RX-
Red wire	RX+
Black wire	TX-
White wire	TX+

d. Connect AUX 2 (optional). Refer to the schematic drawing for an example of how to wire AUX 2.

Orange wire	AUX 2
Blue wire	AUX 2 COMMON

NOTE: CURRENT MUST NOT EXCEED 40 mA.
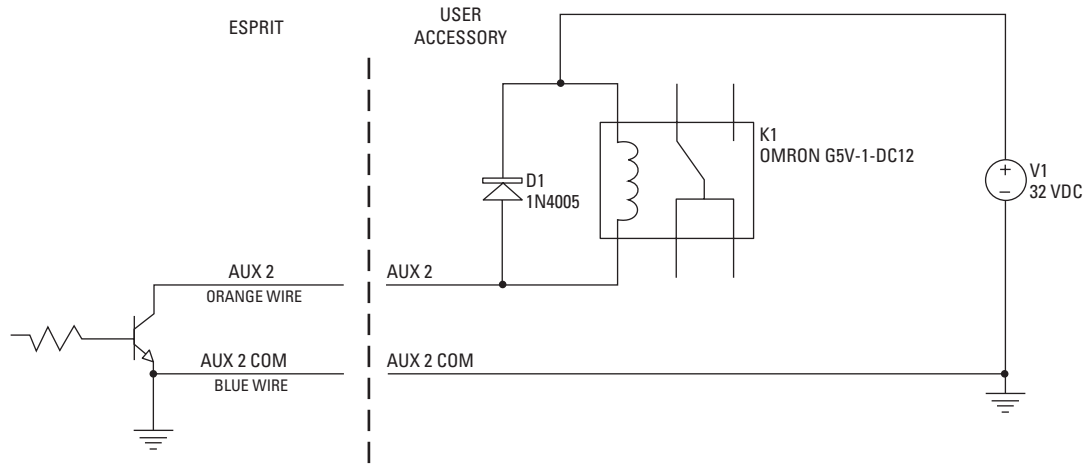
Figure 5. AUX 2 Schematic Drawing

7. Install mount; refer to the installation manual supplied with the mount for instructions.

8. Turn on system power. If the red LED glows, turn off the power and proceed to the next step. If the red LED does not glow, refer to *Maintenance and Troubleshooting* on page 52.

9. Plug the male Esprit system connector, located on the bottom of the pan/tilt, into the female Esprit system connector located on the transformer module. Align the pan/tilt part number with the alignment label of the base and then attach the pan/tilt to the base with three 1/4-20 nuts and washers (supplied).

PART NUMBER

MALE SYSTEM CONNECTOR

FEMALE SYSTEM CONNECTOR

ALIGNMENT LABEL
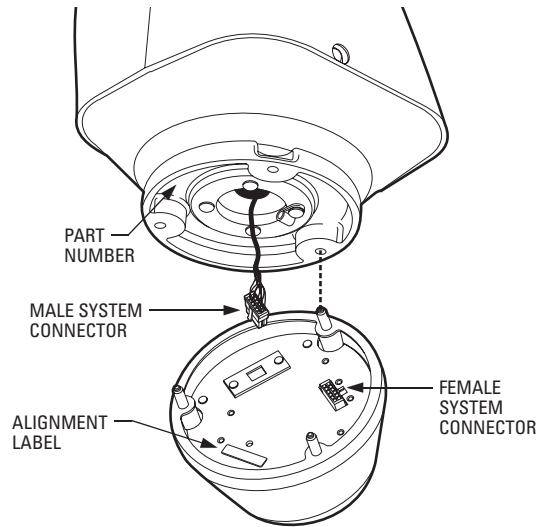
Figure 6. Attaching Base and Pan/Tilt

10. Set the receiver address and system baud rate by configuring DIP switches SW1 and SW2.

    NOTE: If you have a Coaxitron controller, you do not have to set the DIP switches. The Esprit will sense and automatically select settings from Coaxitron control signals in either standard or extended mode.

    To set the DIP switches:

    a. Remove the plug from the left cover of the pan/tilt. It is not necessary to remove the pan/tilt cover.

    b. Set the baud rate (SW1) and receiver address (SW2). For switch settings refer to the labels located in Table A on page 54 and Table C on page 55.

    c. Replace the plug.

ON
OFF
1 2 3 4 5 6 7 8   SW2

ON
OFF
1 2 3 4 5 6 7 8   SW1
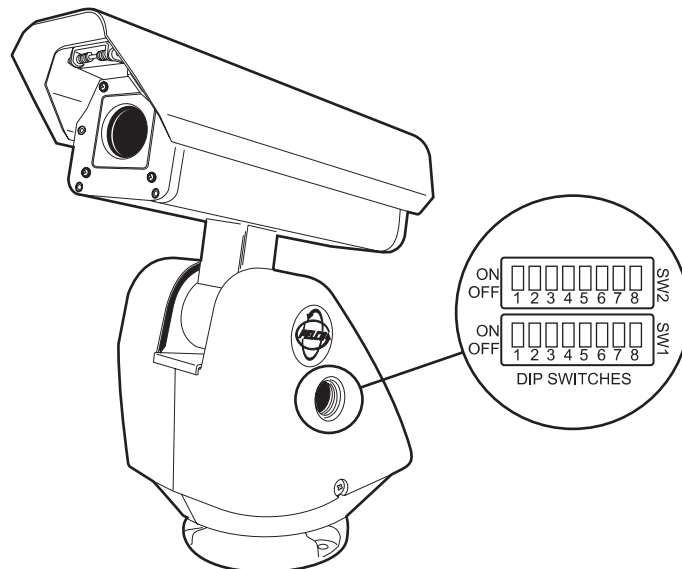
DIP SWITCHES

Figure 7. Setting DIP Switches

11. Refer to *Operation* on page 14 and *Programming* on page 17 for instructions on how to use your ES30TI Series Esprit integrated positioning system.

TXB Series Translator Board Installation (Optional)

Pelco's TXB Series allows controllers from other companies to communicate with the Esprit system.

To install a TXB Series board, remove the left cover of the pan/tilt. Once the cover is removed, refer to the manual supplied with the translator board to complete the installation.

REMOVING THE PAN/TILT COVER

1. Unscrew the Phillips screw located on the left cover of the pan/tilt.

2. Remove cover and place to the side.

PLUG

PHILLIPS SCREW
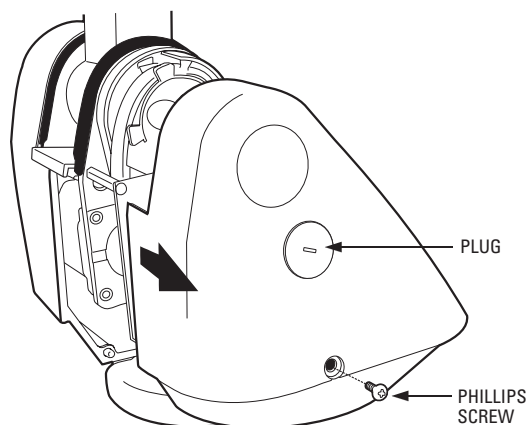
Figure 8. Removing the Pan/Tilt Cover

REINSTALLING THE PAN/TILT COVER

The pan/tilt covers must be properly seated and have a tight seal all the way around when installed.
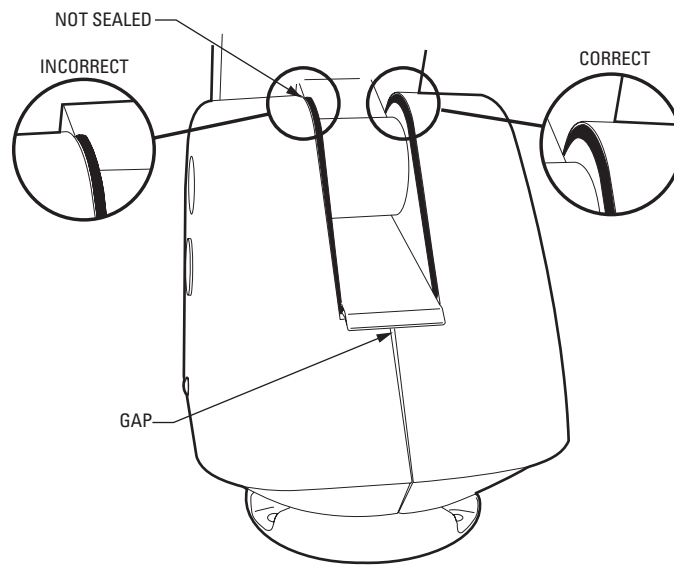
Figure 9. Installing the Pan/Tilt Cover

To reinstall the pan/tilt cover, do the following:

1. Properly position the cover and slide it into place. The sides of the cover must fit under the front and back rain guards of the pan/tilt, and the top of the cover must seat against the lip of the top gasket.

2. Apply pressure and push the top of the cover down to align the fastener holes.

3. Insert the Phillips screw and tighten. Tighten until the screw will not turn.
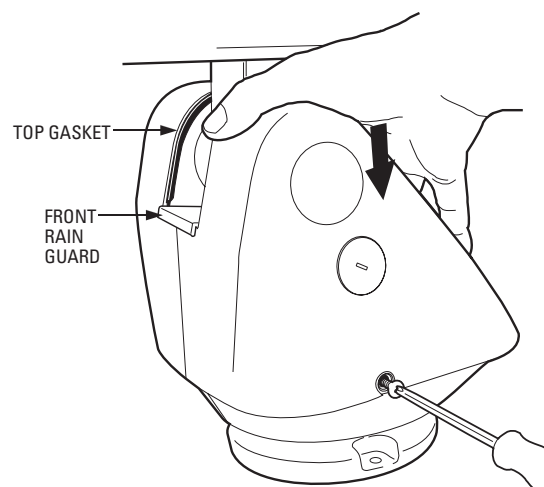
Figure 10. Fastening the Pan/Tilt Cover

Operation

CONFIGURATION DISPLAY

When you apply power to the ES30TI, a configuration screen appears. This screen displays the selected protocol, video format, lens type, and frame rate. The following screen shows the basic configuration information:

```
ESPRIT ES30TI X.XX
CONFIGURE DONE

D ADDRESS X
P ADDRESS X
COMM XXXX, X, X

VIDEO FORMAT:      XXXX
LENS TYPE:         XXXXMM
FRAME RATE:        XX FPS
```

The displayed information depends on the selected protocol (Coaxitron, Pelco D, or Pelco P).

This screen only appears if the Power Up option is set to Default. Also, this screen continues to appear until you move the system. For all other settings, the system bypasses this screen. (Refer to *Power Up Mode* on page 37 for more information.)

HOW TO OPERATE YOUR SYSTEM

Operation	How to Control
Pan/Tilt	Move joystick left/right and up/down.

Scanning
  Stop scan
  Random scan
  Frame scan
  Auto scan
	Call preset 96.
	Call preset 97.
	Call preset 98.
	Call preset 99.

Digital Zoom	To use digital zoom: – Press the Zoom Tele button to select 2X. – Press the Zoom Wide button to return to full screen. Refer to *Zoom* and *Zoom Line* on page 51 for more information. **NOTE:** On some controllers, such as the KBD300A, turn the joystick to the left or right to use digital zoom. Refer to the documentation supplied with the controller.
Sharpness	To change sharpness from the controller (refer to *Sharpness* on page 46 for more information): – Press the Focus Near button to increase sharpness to the next higher setting. – Press the Focus Far button to decrease sharpness to the next lower setting. Changing sharpness also changes the AGC Mode settings. As a result, the Profile setting changes to Modified. (Refer to *AGC Mode* on page 20 and *Profile* on page 38 for more information.)

Display Type
  Switch to Black Hot
  Switch to White Hot
  Switch to Color 1
  Switch to Rain 1
	To quickly select a Display Type:
	Call preset 85.
	Call preset 86.
	Call preset 87.
	Call preset 88.
	Refer to *Display Type* on page 28 for more information.

Delay FFC	To delay the Flat Field Correction (FFC) process for at least one minute, press the Iris Close button. Use this option when you are observing activity that would be interrupted by the FFC process. (Refer to *Flat Field Correction (FFC)* on page 29 for more information.)
Presets	For other presets, refer to the documentation supplied with the controller.
Patterns	Refer to the documentation supplied with the controller.

OPERATING NOTES

ENVIRONMENTAL RANGE

The operating temperature ranges from a minimum of -40°F (-40°C) to a maximum of 131°F (55°C) for sustained system operation or 140°F (60°C) absolute maximum. The entire unit can de-ice and be operational in two hours from a temperature of -13°F (-25°C). The electronically controlled window heater consumes a maximum of 10 W and operates at temperatures of 59°F (15°C) and below.

PAN/TILT FUNCTIONS

Controller Type	Pan (Capability: 360° Continuous Pan Rotation)*	Tilt (Viewing Range: +33° to -83°)†
Fixed speed	Speed determined by controller	Speed determined by controller
Variable speed Turbo Mode‡ Preset Mode‡	0.1° to 40° per second, depending on joystick position 100° per second (50 MPH); 50° per second (90 MPH) 100° per second (50 MPH); 50° per second (90 MPH)	0.1° to 20° per second, depending on joystick positions Does not affect the tilt speed 30° per second

*If manual limit stops are set, Pan limit appears on your monitor when a limit stop is reached (except when you are programming or running a pattern). This does not apply to scan limit stops.

†When the system reaches the upper limit, Tilt limit appears on your monitor (except when you are programming or running a pattern).

‡The unit supports two wind speed profiles: 50 MPH and 90 MPH (for more information, refer to *Speed Profile* on page 47).

TURBO MODE

Turbo mode lets you pan left or right at either 100° per second (50 MPH) or 50° per second (90 MPH). Some controllers have a turbo mode button; others switch to turbo mode if you hold the joystick at either full right or full left. Refer to your controller documentation for the appropriate steps.

SCAN SPEED

Scan speed is adjustable from 1 to 40 degrees per second through the programming menu.

PRESET FUNCTIONS

The Esprit system is capable of going to 80 preset locations, each with a 20-character label. The presets are numbered 1-32 and 35-82. Refer to the documentation for your control system for programming presets.

If you command the pan/tilt to go to an undefined preset, erratic operation may result.

Presets 33 and 34 are fixed commands, meaning that you cannot program them. Preset 33 is the "flip" command, which will pan the system 180 degrees. Preset 34 is the "pan zero" command, which will pan the system to the factory-determined zero reference point.

RANDOM, FRAME, AND AUTO SCANNING

Select preset 97 (30) to start random scanning. Select preset 98 (31) to activate frame scanning (three seconds of scanning followed by a three-second pause). Select preset 99 (32) to start auto (continuous) scanning. Scan limit stops are controlled by software. Refer to *Limit Stops* on page 32 to program the scan limit stops.

When the pan/tilt reaches a scan limit stop, it reverses direction. Select preset 96 (29) to stop a scan. Any pan/tilt or lens command will also stop a scan.

NOTE: The number in parentheses represents the preset for controllers with 32 presets.

ZONES

A zone is a programmed pan area with set boundaries and identifying label. The Esprit system has a maximum of eight zones, each with a 20-character label. Zones can be programmed to blank video when the camera pans into the zone area. If a zone is blanked, the system displays VIDEO BLANK. (Refer to *Zone Blank* on page 49 for more information.)

PATTERNS

The Esprit system can do either one full pattern (1.5, 3, or 6 minutes long) or two half patterns (0.75, 1.5, or 3 minutes long). Refer to *Pattern Length* on page 36 and *Power Up Mode* on page 37 for more information.

Patterns can include any standard pan/tilt or lens command. Presets, flip, proportional pan, and turbo are not allowed in a pattern. Zones can be enabled while running a pattern. Refer to your control system documentation to program and run patterns.

To create a pattern:

1. Access the programming mode for your controller.

2. Create the patterns using the following names:
   - **Long Pattern:** Program PATTERN 0.
   - **Short Pattern:** Program PATTERN 1 and PATTERN 2.

3. Program each pattern.

NOTE: When you program a long pattern, it overwrites any short patterns. When you program short patterns, they overwrite the long pattern.

After you program your patterns, you can call them or configure the unit to run them when it powers up.

PARK

If the system does not receive any commands for a specified period of time (refer to *Park Time Minutes* on page 35), the system goes to preset 1 and parks. If the time specified is zero, or if preset 1 has not been programmed, the pan/tilt will not park.

OPEN COLLECTOR AUXILIARY OUTPUT

An AUX 2 command from the controller will activate a device, such as a relay. The output will remain active for two seconds and then deactivate, even if the controller is set to latching mode.

One example of a device that can be used with AUX 2 is a latching relay (not supplied by Pelco) to control a gate or lights.

To use a relay from the AUX 2 output, the relay must require less than 32 VDC and 40 mA to trigger the relay coil. Also, the relay must be placed within 100 ft (30 m) of the Esprit unit.

Programming

1. Access main menu (preset 95).
2. Make main menu selections.
   Joystick: Move up or down to position cursor or toggle between selections.
   Iris Open: Enter.
   Iris Close: Cancel.

NOTE: The menus on this page show the default settings.

MAIN MENU

```
<Camera>
<Power Up Mode>
<Limit Stops>
<Other>
<System Information>
<Factory Defaults>
Exit
```
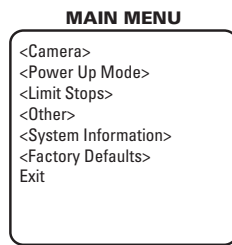
PRESETS

The following presets are reserved for special functions.

Preset	Function
1	Park
33	Flip command
34	Pan zero command
85	Switch to Black Hot
86	Switch to White Hot
87	Switch to Color 1
88	Switch to Rain 1
89	Do manual FFC
90	Manual limit stops (left)
91	Manual limit stops (right)
92	Auto limit stops (left)
93	Auto limit stops (right)
95	Select controller programming menu
96	Stop a scan
97	Random scan
98	Frame scan
99	Auto scan

NOTE: For American Dynamics controllers with only 32 presets, set switch SW1-5 on the Esprit system to the ON position. When SW1-5 is ON, preset

```
99 becomes 32
98 becomes 31
97 becomes 30
96 becomes 29
95 becomes 28
94 becomes 27
93 becomes 26
92 becomes 25
91 becomes 24
90 becomes 23
89 becomes 22
88 becomes 21
```

Camera Menu

```
Display Type          White Hot
Profile               Night

<Sharp/Contrast/Bias>
<Region of Interest>
<Flat Field Correction>
Exit
```

Power Up Mode Menu

```
Power Up              Default
Exit
```

Limit Stops Menu

```
Limit Stops           Off
Set Man Limits
Clear Man Limits
Set Scan Limits
Clear Scan Limits
Exit
```

Other Menu

```
Temp Units            Celsius
Park time minutes     0
Scan Speed deg/s      7
Pattern Length        1.5 min
Spd Profile           90 MPH Wind
<Zone Blank>
<Az/El/Direction>
Exit
```

System Info Menu

```
Software Version      x.xx
Part Number           ES30TI
Serial Number         xxxxxxxxx

Video Format          xxxx
Lens Type             xxxxxmm
Frame Rate            xx FPS

<Camera Information>
Exit
```

Factory Defaults Menu

```
Reset Camera
Restore Camera Defaults
Restore All Defaults
Exit
```

Sharp/Contrast/Bias Menu

```
AGC Mode              Automatic
Sharpness             Medium
Contrast              64*
Hot Bias              100*
Save Profile          Custom 1
Exit
```

Region of Interest Menu

```
ROI                   Off

Region                Center†
Percent               50†
Exit
```

Flat Field Correction Menu

```
Frequency <min>       2
Temp Change <C>       1.0
Do Manual FFC
Exit
```

Camera Info Menu

```
Camera FW Ver.        x.xx.xx
Camera SW Ver.        x.xx.xx
Camera Serial         xxx
Camera Temp           xx.x C

Exit
```

Zone Blank Menu

```
Video Blank Zone      1 Off
                      2 Off
                      3 Off
                      4 Off
                      5 Off
                      6 Off
                      7 Off
                      8 Off
Exit
```

Az/El/Direction

```
Set Azimuth Zero
Az/El                 Left
Az/El Line            10
Direction             Right
Direction Line        10
Zoom                  Center
Zoom Line             10
Disp Duration         2
Exit
```

*These options only appear when AGC Mode is set to Manual.
†These options only appear when ROI is set to On.

If limit stops are disabled, presets 23-26 can be used as regular presets (refer to *Limit Stops* on page 32).
Each menu item is described in greater detail. Sections for each menu item appear alphabetically, starting on page 20.

ACCESSING MAIN MENU (PRESET 95)

You can call up the main menu on your monitor by programming (setting or creating) preset 95 (28 if in 32-preset mode).

Programming preset 95 for Pelco's controllers varies according to the type of controller you are using. Instructions for programming preset 95 are given below for various Pelco controllers.

CM6700/CM6800

1. Enter the number of the camera and press the CAM key.

2. Enter 95 and hold the PRESET key for two seconds.

3. In the Edit Preset menu, use the arrow keys to highlight SET and move the joystick to the right. The main menu appears.

KBD200/KBD300A (Direct Mode Only)

1. Enter 95.

2. Hold the PRESET key (approximately 5 seconds) until the main menu appears on the screen.

CM8500

1. Enter the number of the camera and press the CAM key.

2. Highlight PRESET in the Camera menu and hold down the joystick button until the Set Presets prompt appears.

3. Enter 95 and press the PRESET key. The text editor appears. Select ENTER and the main menu appears.

CM9500

1. Enter the number of the camera and press the CAM key. The Main menu appears.

2. Highlight SETUP in the Main menu and press the SELECT key.

3. Highlight CAM in the Setup menu and press the SELECT key.

4. Highlight PRESET in the Camera menu and press the SELECT key.

5. Enter 95 and press the F1 key. The main menu appears.

CM9750

1. Turn the KEY SWITCH to the ON position.

2. Press the PROG key. PROGRAM appears on the LCD display.

3. Press the PRES key. The PRESET prompt appears.

4. Enter 95 and press the ENTER key. The main menu appears.

5. Turn the KEY SWITCH to the OFF position.

CM9740/CM9760/CM9770/CM9780

1. Press the ESCAPE key to open the Main menu. Select DEF. The Define Menu appears.

2. Enter your four-digit PIN if this is your first time entering this mode.

3. Enter 95 and select PRST. The main menu appears on the monitor.

4. Select the Quit icon to return to the default menu.

KBD4000/KBD4002/KBD4000V

1. Press the SPOT MONITOR key.

2. Enter 95 and then hold the PRESET key (approximately five seconds) until the main menu appears on the screen.

MPT9500

Standard Coaxitron Mode

1. Enter 95 and press the PRESET SET key.

2. Position the asterisk in the YES row and press the F1 key. The main menu appears.

Extended Coaxitron Mode or RS-485 Mode

1. Enter 95 and press the PRESET SET key.

2. Press the F2 key. The main menu appears.

NET300/NET350/NET4001A

1. Check the Set box.

2. Click the preset 95 button. The main menu appears.

Endura™ Systems

If your Esprit positioning system is connected to an Endura system, you can access the main menu directly from the WS5050 Endura Workstation or the VCD5000. Note that access to the main menu is controlled through user permissions.

WS5050

1. Right-click in the video pane that is displaying video from an Esprit positioning system.

2. Click Preset and then click Select Preset.

3. Enter 95 and then click OK.

VCD5000

1. Select a video pane that is displaying video from an Esprit positioning system.

2. Enter 95 on the KBD5000 keyboard. A shortcuts menu appears.

3. Press the Preset button on the keyboard.

AGC MODE

MAIN MENU	*Camera Menu*	*Sharp/Contrast/Bias Menu*
<Camera>	Display Type White Hot	AGC Mode Automatic
<Power Up Mode>	Profile Night	Sharpness Medium
<Limit Stops>		Contrast 64*
<Other>	<Sharp/Contrast/Bias>	Hot Bias 100*
<System Information>	<Region of Interest>	Save Profile Custom 1
<Factory Defaults>	<Flat Field Correction>	Exit
Exit	Exit	
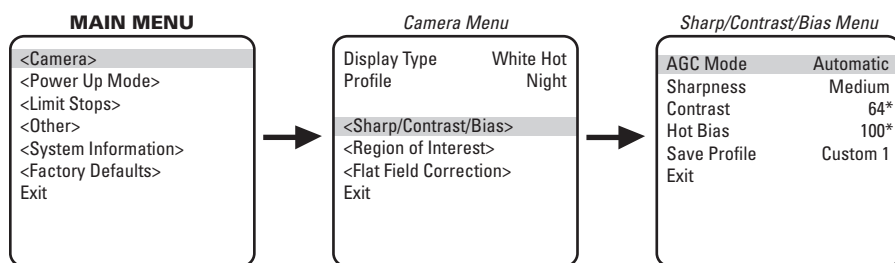
Automatic gain control generally gives the best results and values for hot bias and contrast. In certain scenes and on certain monitors, you may be able to improve performance or increase detail by manually adjusting hot bias and contrast.

The following settings are available for AGC Mode:

• **Automatic:** The camera automatically adjusts hot bias and contrast. When selected, the Contrast and Hot Bias options are removed.

• **Manual:** Manually configure the Contrast and Hot Bias settings. When selected, the Contrast and Hot Bias options appear.

The default is Automatic.

To change the AGC mode:

1. Program preset 95 (28). The main menu appears.

2. Position the cursor (>) beside <Camera>. Press the Iris Open button; the menu appears.

3. Position the cursor (>) beside <Sharp/Contrast/Bias>. Press the Iris Open button; the menu appears.

4. Position the cursor (>) beside AGC Mode. Press the Iris Open button; the cursor moves to the right.

5. Move the joystick up or down to toggle between Automatic and Manual.

6. Do one of the following:
   • **Select:** Press the Iris Open button to select the option.
   • **Cancel:** Press the Iris Close button to leave the setting as is.

*These options only appear when AGC Mode is set to Manual.

AZ/EL

MAIN MENU	Other Menu	Az/El/Direction
<Camera>	Temp Units Celsius	Set Azimuth Zero
<Power Up Mode>	Park time minutes 0	Az/El Left
<Limit Stops>	Scan Speed deg/s 7	Az/El Line 10
<Other>	Pattern Length 1.5 min	Direction Right
<System Information>	Spd Profile 90 MPH Wind	Direction Line 10
<Factory Defaults>	<Zone Blank>	Zoom Center
Exit	<Az/El/Direction>	Zoom Line 10
	Exit	Disp Duration 2
		Exit
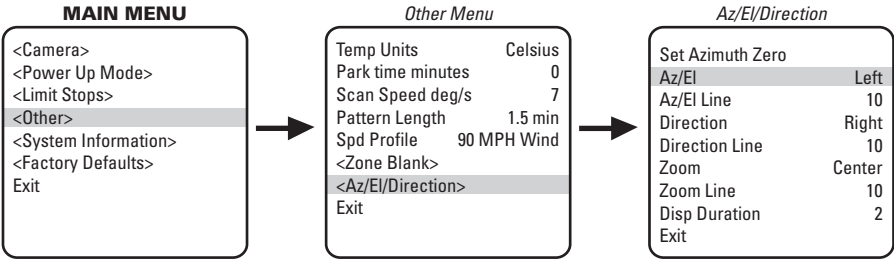
Az/El programs the horizontal display position of the Azimuth*/Elevation† label.

NOTE:

- Az/El display is not available while you are programming or running a pattern.

- Use different horizontal position and line settings for Az/El, Direction, and Zoom. Otherwise, the labels may overwrite one another.

The following settings are available for the Az/El label:

- **Off:** Label is not displayed.
- **Left:** Label is displayed on the left-hand side of the screen.
- **Center:** Label is displayed in the center of the screen.
- **Right:** Label is displayed on the right-hand side of the screen.

The default is Left.

To program the horizontal label position for Az/El:

1. Program preset 95 (28). The main menu appears.

2. Position the cursor (>) beside <Other>. Press the Iris Open button; the menu appears.

3. Position the cursor (>) beside <Az/El/Direction>. Press the Iris Open button; the menu appears.

4. Position the cursor (>) beside Az/El. Press the Iris Open button; the cursor moves to the right.

5. Move the joystick up or down to view the available selections.

6. Do one of the following:
    - **Select:** Press the Iris Open button to select the option.
    - **Cancel:** Press the Iris Close button to leave the setting as is.

*Azimuth is the pan angle from 0° to 359°.
†Elevation is the tilt position from 33° to -83°.

AZ/EL LINE

```
     MAIN MENU                    Other Menu                    Az/El/Direction

<Camera>                 Temp Units          Celsius      Set Azimuth Zero
<Power Up Mode>          Park time minutes         0      Az/El                Left
<Limit Stops>            Scan Speed deg/s          7      Az/El Line             10
<Other>                  Pattern Length      1.5 min      Direction           Right
<System Information>     Spd Profile    90 MPH Wind        Direction Line         10
<Factory Defaults>       <Zone Blank>                     Zoom              Center
Exit                     <Az/El/Direction>                Zoom Line              10
                         Exit                             Disp Duration           2
                                                          Exit
```
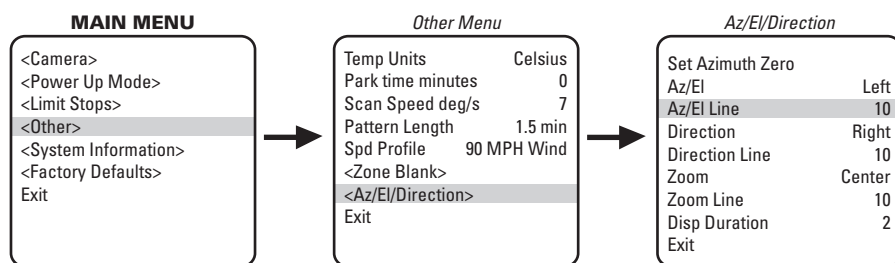
Az/El Line controls the vertical display position of the Azimuth/Elevation label. You can display the label on lines 3 through 10.

Line 3 is the third line from the top of the screen; line 10 is located at the bottom of the screen. The default is 10.

NOTES:

- Az/El display is not available while you are programming or running a pattern.

- Use different horizontal position and line settings for Az/El, Direction, and Zoom. Otherwise, the labels may overwrite one another.

To program the vertical label position for Az/El:

1. Program preset 95 (28). The main menu appears.

2. Position the cursor (>) beside <Other>. Press the Iris Open button; the menu appears.

3. Position the cursor (>) beside <Az/El/Direction>. Press the Iris Open button; the menu appears.

4. Position the cursor (>) beside Az/El Line. Press the Iris Open button; the cursor moves to the right.

5. Move the joystick up or down to view the available selections.

6. Do one of the following:
   - **Select:** Press the Iris Open button to select the option.
   - **Cancel:** Press the Iris Close button to leave the setting as is.

AZIMUTH ZERO

MAIN MENU	*Other Menu*	*Az/El/Direction*
<Camera>	Temp Units Celsius	**Set Azimuth Zero**
<Power Up Mode>	Park time minutes 0	Az/El Left
<Limit Stops>	Scan Speed deg/s 7	Az/El Line 10
<Other>	Pattern Length 1.5 min	Direction Right
<System Information>	Spd Profile 90 MPH Wind	Direction Line 10
<Factory Defaults>	<Zone Blank>	Zoom Center
Exit	<Az/El/Direction>	Zoom Line 10
	Exit	Disp Duration 2
		Exit
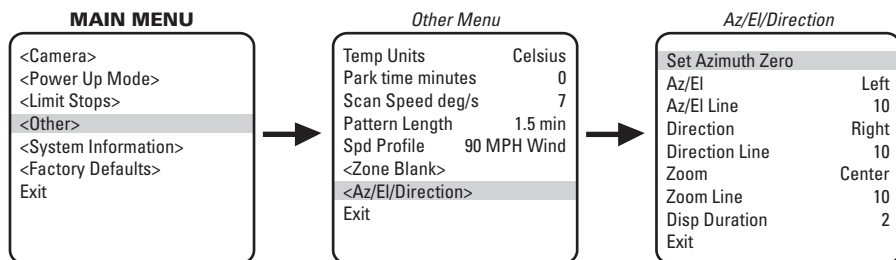
Azimuth is the pan angle from 0 to 359 degrees. Azimuth zero is the programmed zero-degree point that is normally set to magnetic north. This zero point is the basis of the on-screen pan position (azimuth) and compass readings.

To set azimuth zero:

1. Program preset 95 (28). The main menu appears.

2. Position the cursor (>) beside <Other>. Press the Iris Open button; the menu appears.

3. Position the cursor (>) beside <Az/El/Direction>. Press the Iris Open button; the menu appears.

4. Position the cursor (>) beside Set Azimuth Zero. Press the Iris Open button. The Set Azimuth Zero programming menu appears on the monitor.

5. Use the joystick to pan the Esprit unit to the desired azimuth zero (0° point) position.

6. Press the Iris Open button to set the azimuth zero position.

CONTRAST

MAIN MENU	Camera Menu	Sharp/Contrast/Bias Menu
<Camera>	Display Type White Hot	AGC Mode Manual
<Power Up Mode>	Profile Night	Sharpness Medium
<Limit Stops>		Contrast 64*
<Other>	<Sharp/Contrast/Bias>	Hot Bias 100*
<System Information>	<Region of Interest>	Save Profile Custom 1
<Factory Defaults>	<Flat Field Correction>	Exit
Exit	Exit	

Use the Contrast option to adjust the contrast across the color palette. Increase the Contrast setting to represent midrange temperatures closer to the extremes. Decrease the Contrast setting to represent extreme temperatures closer to the midrange. The range is 1 to 255. The default is 64.

For example, when using the White Hot display type, increase the Contrast setting to adjust dark grays toward black and light grays toward white; the gray midrange decreases. Decrease the Contrast setting to adjust blacks toward dark gray and whites toward light gray; the black and white extremes decrease.

NOTE: This option is only available when AGC Mode is set to Manual. If AGC Mode is set to Automatic, change AGC Mode to Manual before proceeding (refer to *AGC Mode* on page 20).

To change the Contrast:

1. Program preset 95 (28). The main menu appears.

2. Position the cursor (>) beside <Camera>. Press the Iris Open button; the menu appears.

3. Position the cursor (>) beside <Sharp/Contrast/Bias>. Press the Iris Open button; the menu appears.

4. Position the cursor (>) beside Contrast. Press the Iris Open button; the cursor moves to the right.

5. Move the joystick up or down until the desired Contrast setting appears.

6. Do one of the following:
   - **Select:** Press the Iris Open button to select the option.
   - **Cancel:** Press the Iris Close button to leave the setting as is.

*These options only appear when AGC Mode is set to Manual.

DIRECTION

```
MAIN MENU                Other Menu                    Az/El/Direction

<Camera>            Temp Units        Celsius     Set Azimuth Zero
<Power Up Mode>     Park time minutes       0     Az/El               Left
<Limit Stops>       Scan Speed deg/s        7     Az/El Line            10
<Other>             Pattern Length    1.5 min     Direction          Right
<System Information>  Spd Profile   90 MPH Wind    Direction Line        10
<Factory Defaults>  <Zone Blank>                  Zoom             Center
Exit                <Az/El/Direction>             Zoom Line             10
                    Exit                          Disp Duration          2
                                                  Exit
```
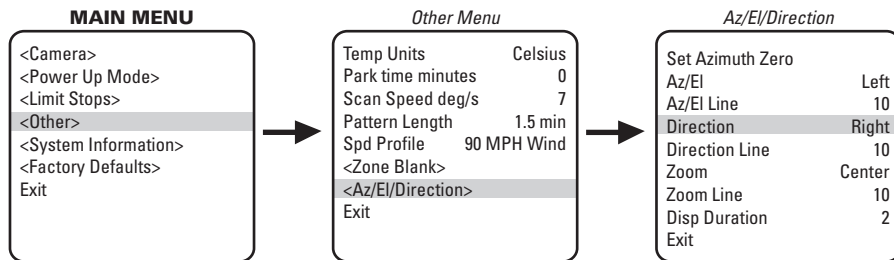
Direction programs the horizontal display position of the Direction label (N, NW, NE, …)

NOTES:

- For direction to be accurate, azimuth zero must be set to magnetic north.

- Direction display is not available when you are programming or running a pattern.

- Use different horizontal position and line settings for Az/El, Direction, and Zoom. Otherwise, the labels may overwrite one another.

The following settings are available for the Direction label:

- **Off:** Label is not displayed.
- **Left:** Label is displayed on the left-hand side of the screen.
- **Center:** Label is displayed in the center of the screen.
- **Right:** Label is displayed on the right-hand side of the screen.

The default is Right.

To program the horizontal label position for direction:

1. Program preset 95 (28). The main menu appears.

2. Position the cursor (>) beside <Other>. Press the Iris Open button; the menu appears.

3. Position the cursor (>) beside <Az/El/Direction>. Press the Iris Open button; the menu appears.

4. Position the cursor (>) beside Direction. Press the Iris Open button; the cursor moves to the right.

5. Move the joystick up or down to view the available selections.

6. Do one of the following:
   - **Select:** Press the Iris Open button to select the option.
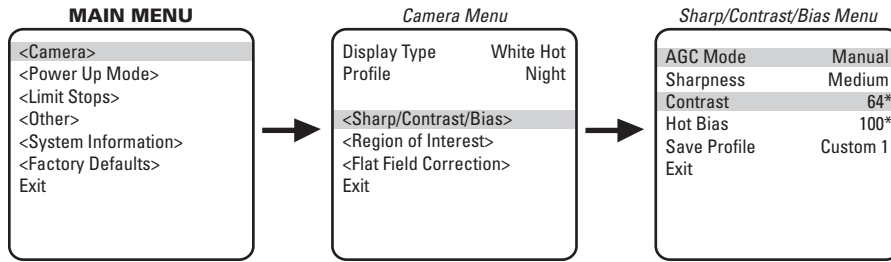   - **Cancel:** Press the Iris Close button to leave the setting as is.

DIRECTION LINE

MAIN MENU

```
<Camera>
<Power Up Mode>
<Limit Stops>
<Other>
<System Information>
<Factory Defaults>
Exit
```

Other Menu

```
Temp Units          Celsius
Park time minutes         0
Scan Speed deg/s          7
Pattern Length      1.5 min
Spd Profile     90 MPH Wind
<Zone Blank>
<Az/El/Direction>
Exit
```

Az/El/Direction

```
Set Azimuth Zero
Az/El               Left
Az/El Line            10
Direction          Right
Direction Line        10
Zoom             Center
Zoom Line             10
Disp Duration          2
Exit
```
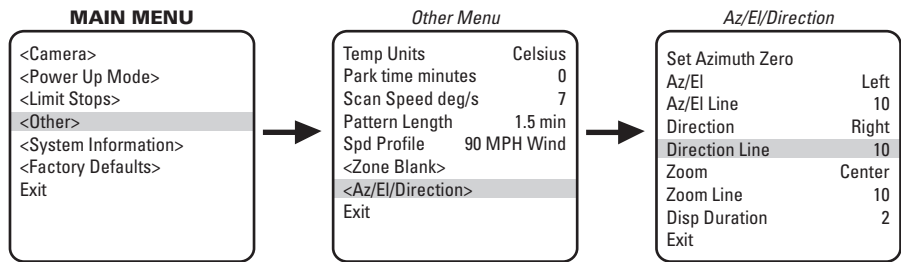
Direction Line controls the vertical display position of the Direction label. You can display the label on lines 3 through 10.

Line 3 is the third line from the top of the screen; line 10 is located at the bottom of the screen. The default is 10.

NOTES:

• Direction display is not available while you are programming or running a pattern.

• Use different horizontal position and line settings for Az/El, Direction, and Zoom. Otherwise, the labels may overwrite one another.

To program the vertical label position for direction:

1. Program preset 95 (28). The main menu appears.

2. Position the cursor (>) beside <Other>. Press the Iris Open button; the menu appears.

3. Position the cursor (>) beside <Az/El/Direction>. Press the Iris Open button; the menu appears.

4. Position the cursor (>) beside Direction Line. Press the Iris Open button; the cursor moves to the right.

5. Move the joystick up or down to view the available selections.

6. Do one of the following:
   • **Select:** Press the Iris Open button to select the option.
   • **Cancel:** Press the Iris Close button to leave the setting as is.

DISPLAY DURATION

```
       MAIN MENU                    Other Menu                     Az/El/Direction
┌─────────────────────┐   ┌─────────────────────────┐   ┌─────────────────────────┐
│ <Camera>            │   │ Temp Units      Celsius │   │ Set Azimuth Zero        │
│ <Power Up Mode>     │   │ Park time minutes     0 │   │ Az/El             Left  │
│ <Limit Stops>       │ ▶ │ Scan Speed deg/s      7 │ ▶ │ Az/El Line          10  │
│ <Other>             │   │ Pattern Length  1.5 min │   │ Direction         Right │
│ <System Information>│   │ Spd Profile 90 MPH Wind │   │ Direction Line      10  │
│ <Factory Defaults>  │   │ <Zone Blank>            │   │ Zoom            Center  │
│ Exit                │   │ <Az/El/Direction>       │   │ Zoom Line           10  │
│                     │   │ Exit                    │   │ Disp Duration        2  │
└─────────────────────┘   └─────────────────────────┘   │ Exit                    │
                                                         └─────────────────────────┘
```
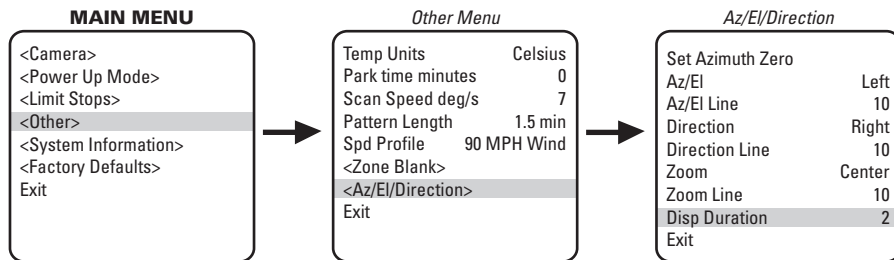
Display Duration programs the duration the Az/El, Direction, and Zoom labels are displayed on the monitor. The available settings for display duration include the following:

- **Cont:** The label appears continuously.
- **2:** The label appears for 2 seconds after PTZ functions end.
- **5:** The label appears for 5 seconds after PTZ functions end.
- **10:** The label appears for 10 seconds after PTZ functions end.

The default is 2 seconds.

To program the display duration for the Az/El, Direction, and Zoom labels:

1. Program preset 95 (28). The main menu appears.

2. Position the cursor (>) beside <Other>. Press the Iris Open button; the menu appears.

3. Position the cursor (>) beside <Az/El/Direction>. Press the Iris Open button; the menu appears.

4. Position the cursor (>) beside Disp Duration. Press the Iris Open button; the cursor moves to the right.

5. Move the joystick up or down to view the available selections.

6. Do one of the following:
   - **Select:** Press the Iris Open button to select the option.
   - **Cancel:** Press the Iris Close button to leave the setting as is.

DISPLAY TYPE

MAIN MENU

```
<Camera>
<Power Up Mode>
<Limit Stops>
<Other>
<System Information>
<Factory Defaults>
Exit
```

Camera Menu

```
Display Type        White Hot
Profile             Night

<Sharp/Contrast/Bias>
<Region of Interest>
<Flat Field Correction>
Exit
```
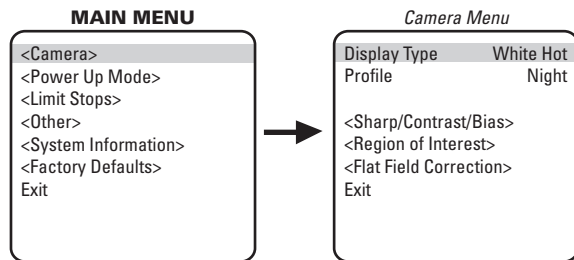
Display Type programs the specific palette of colors to represent the temperatures in the thermal image. These colors are not calibrated to a specific temperature. Rather, they represent the temperature variations within the thermal image. The following table lists the available display types and their color palettes. These palettes show the range of colors from hot temperatures to cold temperatures.

Display Type	Hot		Warm		Cool		Cold	
White Hot	White	Near White	Light Gray	Gray	Gray	Dark Gray	Near Black	Black
Black Hot	Black	Near Black	Dark Gray	Gray	Gray	Light Gray	Near White	White
Blue/Red	Red	Near White	Light Gray	Gray	Gray	Dark Gray	Near Black	Blue
Rain 1	White	Red	Yellow	Green	Blue	Purple	Magenta	Black
Rain 2	White	Yellow	Red	Light Green	Dark Green	Light Blue	Dark Blue	Black
Color 1	White	Light Yellow	Yellow	Dark Yellow	Light Brown	Brown	Dark Brown	Black
Color 2	White	Yellow	Light Orange	Orange	Red	Purple	Dark Purple	Black
Color 3	White	Light Yellow	Yellow	Light Orange	Orange	Red	Dark Red	Black
Color 4	White/Red	Orange	Light Green	Green	Light Blue	Blue	Purple	Magenta/Black
Color 5	White	Light Orange	Orange	Red	Magenta	Light Purple	Purple	Black
Color 6	White	Yellow	Orange	Red	Magenta	Purple	Dark Purple	Black
Color 7	White	Yellow	Light Orange	Orange	Red	Magenta	Dark Purple	Black

The default is White Hot.

NOTE: For a full color representation of each color palette, go to pelco.com/espritTIpalettes/Pelco_ES30TI_Series_Esprit_Positioning_System_Palettes_manual.PDF.

To program the display type:

1. Program preset 95 (28). The main menu appears.

2. Position the cursor (>) beside <Camera>. Press the Iris Open button; the menu appears.

3. Position the cursor (>) beside Display Type. Press the Iris Open button; the cursor moves to the right.

4. Move the joystick up or down to view the available selections.

5. Do one of the following:
   - **Select:** Press the Iris Open button to select the option.
   - **Cancel:** Press the Iris Close button to leave the setting as is.

You may test each one to find the best display type for your installation.

You can also use the following presets to quickly select one of the following display types:

Switch to Black Hot	Call preset 85
Switch to White Hot	Call preset 86
Switch to Color 1	Call preset 87
Switch to Rain 1	Call preset 88

FLAT FIELD CORRECTION (FFC)

MAIN MENU

```
<Camera>
<Power Up Mode>
<Limit Stops>
<Other>
<System Information>
<Factory Defaults>
Exit
```

Camera Menu

```
Display Type        White Hot
Profile             Night

<Sharp/Contrast/Bias>
<Region of Interest>
<Flat Field Correction>
Exit
```

Flat Field Correction Menu

```
Frequency <min>          2
Temp Change <C>        1.0
Do Manual FFC
Exit
```

Flat Field Correction (FFC) controls how the camera regularly adjusts its thermal settings to optimize its image. This process takes about 0.5 seconds. During this process, there may be a lag in image quality.

Before performing the FFC process, the camera warns the operator by displaying a small blinking box in the upper left corner. This indicator appears for 2 seconds.

You can delay the FFC process at any time. Press the Iris Close button to delay the FFC for at least one minute. Use the delay option when you are observing activity that would be interrupted by the FFC process.

The following sections describe how to use each FFC option.

FREQUENCY

Frequency controls how often the camera performs the FFC process, regardless of the temperature change in the field of view. After each FFC, the camera restarts the frequency clock.

You can select from 2 to 16 minutes. The default is 2 minutes.

NOTE: For best results, keep the Frequency setting at the default value.

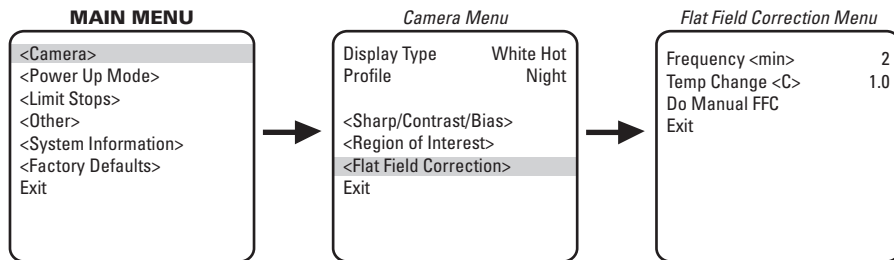To program the frequency:

1. Program preset 95 (28). The main menu appears.

2. Position the cursor (>) beside <Camera>. Press the Iris Open button; the menu appears.

3. Position the cursor (>) beside <Flat Field Correction>. Press the Iris Open button; the menu appears.

4. Position the cursor (>) beside Frequency <min>. Press the Iris Open button; the cursor moves to the right.

5. Move the joystick up or down until the desired Frequency setting appears.

6. Do one of the following:
   - **Select:** Press the Iris Open button to select the option.
   - **Cancel:** Press the Iris Close button to leave the setting as is.

TEMP CHANGE

Temperature Change sets the increment (in degrees) of change required to automatically trigger the FFC process when the temperature changes in the field of view. After each FFC, the camera resets the baseline temperature and resumes temperature monitoring.

You can select from the following:

- 1.0 - 3.0°C
- 1.8 - 5.4°F

The default is based on the Temp Units settings (refer to *Temp Units* on page 48):

- 1.0°C
- 1.8°F

To program the temperature change:

1. Program preset 95 (28). The main menu appears.

2. Position the cursor (>) beside <Camera>. Press the Iris Open button; the menu appears.

3. Position the cursor (>) beside <Flat Field Correction>. Press the Iris Open button; the menu appears.

4. Position the cursor (>) beside Temp Change. Press the Iris Open button; the cursor moves to the right.

5. Move the joystick up or down until the desired Temp Change setting appears.

6. Do one of the following:
   - **Select:** Press the Iris Open button to select the option.
   - **Cancel:** Press the Iris Close button to leave the setting as is.

DO MANUAL FFC

From time to time, image quality may degrade. When this happens, perform a manual FFC. After manually performing this process, the camera restarts the frequency clock and resets the baseline temperature.

To manually perform the FFC:

1. Program preset 95 (28). The main menu appears.

2. Position the cursor (>) beside <Camera>. Press the Iris Open button; the menu appears.

3. Position the cursor (>) beside <Flat Field Correction>. Press the Iris Open button; the menu appears.

4. Position the cursor (>) beside Do Manual FFC.

5. Press the Iris Open button to perform the FFC process. The cursor briefly changes to an asterisk (*) during the FFC process.

You can also call preset 89 to perform the FFC quickly.

HOT BIAS

MAIN MENU

<Camera>	
<Power Up Mode>	
<Limit Stops>	
<Other>	
<System Information>	
<Factory Defaults>	
Exit	

Camera Menu

Display Type	White Hot
Profile	Night
<Sharp/Contrast/Bias>	
<Region of Interest>	
<Flat Field Correction>	
Exit	

Sharp/Contrast/Bias Menu

AGC Mode	Manual
Sharpness	Medium
Contrast	64*
Hot Bias	100*
Save Profile	Custom 1
Exit	

Use the Hot Bias option to adjust how the color palette represents the temperature range of the image. The Hot Bias range is 1 to 200. The default is 100.

Increase the Hot Bias setting to push the color palette to a warmer range of temperatures. Warmer temperatures appear as hot; cooler temperatures appear as warmer; cold temperatures appear as cool.

Decrease the Hot Bias setting to push the color palette to a cooler range of temperatures. Cooler temperatures appear as cold; warmer temperatures appear as cooler; hot temperatures appear as warm.

For example, when using the White Hot display type, decreasing the Hot Bias adjusts whites to grays and grays to black. Increasing the Hot Bias setting adjusts blacks to grays and grays to whites.

NOTE: This option is only available when AGC Mode is set to Manual. If AGC Mode is set to Automatic, change AGC Mode to Manual before proceeding (refer to *AGC Mode* on page 20).

To change the hot bias:

1. Program preset 95 (28). The main menu appears.

2. Position the cursor (>) beside <Camera>. Press the Iris Open button; the menu appears.

3. Position the cursor (>) beside <Sharp/Contrast/Bias>. Press the Iris Open button; the menu appears.

4. Position the cursor (>) beside Hot Bias. Press the Iris Open button; the cursor moves to the right.

5. Move the joystick up or down until the desired Hot Bias setting appears.

6. Do one of the following:
   - **Select:** Press the Iris Open button to select the option.
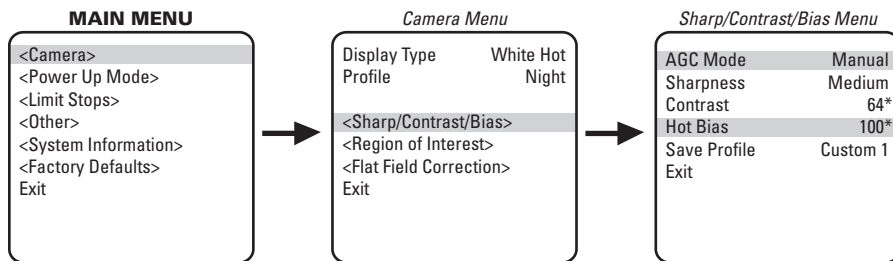   - **Cancel:** Press the Iris Close button to leave the setting as is.

*These options only appear when AGC Mode is set to Manual.

LIMIT STOPS

MAIN MENU

```
<Camera>
<Power Up Mode>
<Limit Stops>
<Other>
<System Information>
<Factory Defaults>
Exit
```

Limit Stops Menu

```
Limit Stops          Off
Set Man Limits
Clear Man Limits
Set Scan Limits
Clear Scan Limits
Exit
```
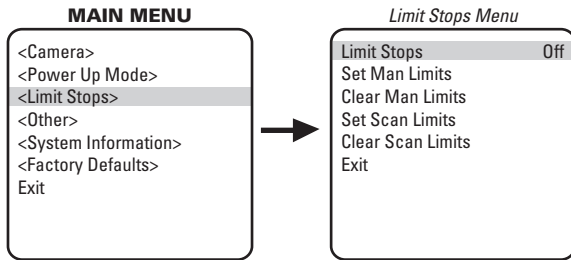
The Limit Stops options control the pan position limit for the camera. You can set different limits for manual operation and for automatic scan operation.

NOTE: Limit stops are inactive while setting items in the program menu (such as, azimuth zero, scan limits, manual pan limits).

TURNING LIMIT STOPS ON OR OFF

Manual and scan limit stops have to be enabled before they can be programmed. Limit Stops are set to OFF by default.

To change the limit stop mode:

1. Program preset 95 (28). The main menu appears.

2. Position the cursor (>) beside <Limit Stops>. Press the Iris Open button; the menu appears.

3. Position the cursor (>) beside Limit Stops. Press the Iris Open button; the cursor moves to the right.

4. Move the joystick up or down to toggle between On and Off.

5. Do one of the following:
   - **Select:** Press the Iris Open button to select the option.
   - **Cancel:** Press the Iris Close button to leave the setting as is.

PROGRAMMING LIMIT STOPS

Manual Limit Stops

When manual limit stops are set, a pan operation (joystick and pan/tilt keys) stops when a limit stop is reached. Manual limit stops can be set using controller presets or using the Limit Stops menu.

Controller Presets

NOTE: Before using controller presets, refer to the documentation for your control system for information about programming presets.

To program manual limit stops using controller presets:

1. Enable limit stops (refer to *Turning Limit Stops On or Off* above) and exit the menu.

2. Push the joystick left until the camera reaches the leftmost limit, or position, for the camera.

3. Program preset 90 (23). This is the left manual limit.

4. Push the joystick right until the camera reaches the rightmost limit, or position, for the camera.

5. Program preset 91 (24). This is the right manual limit.

If you set presets 90 (23) and 91 (24) to the same point, the camera disables manual limit stops.

When you program preset 90 (23), the manual limit stops are disabled until you program preset 91 (24).

Limit Stops Menu

To program manual limit stops using the Limit Stops menu:

1. Program preset 95 (28). The main menu appears.

2. Position the cursor (>) beside <Limit Stops>. Press the Iris Open button; the menu appears.

3. Position the cursor (>) beside Set Man Limits. Press the Iris Open button. The message PRESS IRIS OPEN TO SET LEFT LIMIT appears.

4. Push the joystick left until the camera reaches the leftmost limit, or position, for the camera.

5. Press the Iris Open button. This is the left manual limit. The message PRESS IRIS OPEN TO SET RIGHT LIMIT appears.

6. Push the joystick right until the camera reaches the rightmost limit, or position, for the camera.

7. Press the Iris Open button. This is the right manual limit.

8. Exit the Limit Stops menu.

Clear Manual Stops

To clear the manual limit stops:

1. Program preset 95 (28). The main menu appears.

2. Position the cursor (>) beside <Limit Stops>. Press the Iris Open button; the menu appears.

3. Position the cursor (>) beside Clear Man Limits. Press the Iris Open button; the cursor briefly changes to an asterisk (*) to show that the limit stops have been disabled.

Scan Limit Stops

Use scan limit stops to reverse the pan operation when the unit reaches a limit stop during random, frame, or auto scanning. Scan limit stops can be set using controller presets or using the Limit Stops menu.

Presets

NOTE: Before using controller presets, refer to the documentation for your control system for information about programming presets.

To program scan limit stops using controller presets:

1. Enable limit stops (refer to *Turning Limit Stops On or Off* on page 32) and exit the menu.

2. Push the joystick left until the camera reaches the leftmost limit, or position, for the camera.

3. Program preset 92 (25). This is the left scan limit.

4. Push the joystick right until the camera reaches the rightmost limit, or position, for the camera.

5. Program preset 93 (26). This is the right scan limit.

If you set presets 92 (25) and 93 (26) to the same point, the camera disables scan limit stops.

When you program preset 92 (25), the scan limit stops are disabled until you program preset 93 (26).

Limit Stops Menu

To program scan limit stops using the Limit Stops menu:

1. Program preset 95 (28). The main menu appears.

2. Position the cursor (>) beside <Limit Stops>. Press the Iris Open button; the menu appears.

3. Position the cursor (>) beside Set Scan Limits. Press the Iris Open button. The message PRESS IRIS OPEN TO SET LEFT LIMIT appears.

4. Push the joystick left until the camera reaches the leftmost limit, or position, for the camera.

5. Press the Iris Open button. This is the left scan limit. The message PRESS IRIS OPEN TO SET RIGHT LIMIT appears.

6. Push the joystick right until the camera reaches the rightmost limit, or position, for the camera.

7. Press the Iris Open button. This is the right scan limit.

8. Exit the Limit Stops menu.

Clear Scan Limit Stops

To clear the scan limit stops:

1. Program preset 95 (28). The main menu appears.

2. Position the cursor (>) beside <Limit Stops>. Press the Iris Open button; the menu appears.

3. Position the cursor (>) beside Clear Scan Limits. Press the Iris Open button; the cursor briefly changes to an asterisk (*) to show that the limit stops have been disabled.

PARK TIME MINUTES

<table>
<tr><td colspan="2">MAIN MENU</td><td>Other Menu</td></tr>
<tr><td>

<Camera>
<Power Up Mode>
<Limit Stops>
<Other>
<System Information>
<Factory Defaults>
Exit

</td><td>→</td><td>

Temp Units   Celsius
Park time minutes   0
Scan Speed deg/s   7
Pattern Length   1.5 min
Spd Profile   90 MPH Wind
<Zone Blank>
<Az/El/Direction>
Exit

</td></tr>
</table>

Use this feature to park at the preset 1 position after a specific number of minutes of control inactivity. You can set this number from 1 minute to 720 minutes (12 hours), or you can set it to zero to disable this feature. The default is 0 (disabled).

NOTE: You must program Preset 1 for the system to use this feature.

To change the park time:

1. Program preset 95 (28). The main menu appears.

2. Position the cursor (>) beside <Other>. Press the Iris Open button; the menu appears.

3. Position the cursor (>) beside Park Time Minutes. Press the Iris Open button; the cursor moves to the right.

4. Move the joystick up or down to change the park time.

5. Do one of the following:
   - **Select:** Press the Iris Open button to select the option.
   - **Cancel:** Press the Iris Close button to leave the setting as is.

PATTERN LENGTH

```
        MAIN MENU                    Other Menu
┌─────────────────────┐      ┌─────────────────────────┐
│ <Camera>            │      │ Temp Units      Celsius │
│ <Power Up Mode>     │      │ Park time minutes     0 │
│ <Limit Stops>       │      │ Scan Speed deg/s      7 │
│ <Other>             │ ───▶ │ Pattern Length   1.5 min│
│ <System Information>│      │ Spd Profile  90 MPH Wind│
│ <Factory Defaults>  │      │ <Zone Blank>            │
│ Exit                │      │ <Az/El/Direction>       │
│                     │      │ Exit                    │
└─────────────────────┘      └─────────────────────────┘
```
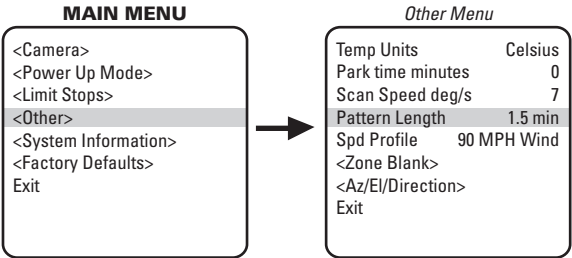
The Esprit can run either of the following:

- One full pattern that is 1.5, 3, or 6 minutes long.
- Two half patterns that are 0.75, 1.5, or 3 minutes long.

This pattern can consist of any standard pan/tilt or lens command. Presets, flip, and turbo are not allowed in a pattern. Zone scan can be enabled while running a pattern. (For more information about programming patterns, refer to *Patterns* on page 16.)
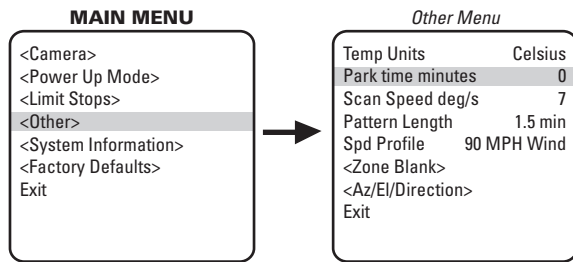
To set the pattern length:

1. Program preset 95 (28). The main menu appears.

2. Position the cursor (>) beside <Other>. Press the Iris Open button; the menu appears.

3. Position the cursor (>) beside Pattern Length. Press the Iris Open button; the cursor moves to the right.

4. Move the joystick up or down to toggle through the number of minutes (1.5, 3, or 6).

⚠ **CAUTION:** If the pattern length is changed, all patterns that were stored are erased.

5. Do one of the following:
   - **Select:** Press the Iris Open button to select the option.
   - **Cancel:** Press the Iris Close button to leave the setting as is.

POWER UP MODE

MAIN MENU

```
<Camera>
<Power Up Mode>
<Limit Stops>
<Other>
<System Information>
<Factory Defaults>
Exit
```

Power Up Mode Menu

```
Power Up          Default
Exit
```

Use this feature to execute a specific set of commands following the power up sequence. You can select from the following:

- **Default:** On power up, the system performs a configuration cycle and stops at zero reference, showing Configuration Done, address, and mode settings on the screen.

- **Park:** The system moves to preset 1 after the configuration cycle ends. The only text on the screen is the preset label (if one is programmed).

- **Scan Auto:** The system initiates scan mode after the configuration cycle ends.

- **Scan Frame:** The system initiates a frame scan after the configuration cycle ends.

- **Scan Rand:** The system initiates a random scan after the configuration cycle ends.

- **Full Pat:** The system initiates its programmed pattern after the configuration cycle ends. The length can be set to 1.5, 3, or 6 minutes.

- **Half Pat 1:** The system initiates the first half-pattern after the configuration cycle ends. The length can be set to 0.75, 1.5, or 3 minutes.

- **Half Pat 2:** The system initiates the second half-pattern after the configuration cycle ends. The length can be set to 0.75, 1.5, or 3 minutes.

The default setting is Default.

To execute Full Pat, Half Pat 1, or Half Pat 2 upon power up, first program the system with the appropriate pattern.

To select the power up mode:

1. Program preset 95 (28). The main menu appears.

2. Position the cursor (>) beside <Power Up Mode>. Press the Iris Open button; the menu appears.

3. Position the cursor (>) beside Power Up. Press the Iris Open button; the cursor moves to the right.

4. Move the joystick up or down to view the available selections.

5. Do one of the following:
   - **Select:** Press the Iris Open button to select the option.
   - **Cancel:** Press the Iris Close button to leave the setting as is.

PROFILE

```
        MAIN MENU                         Camera Menu
  ┌─────────────────────┐          ┌─────────────────────────┐
  │ <Camera>            │          │ Display Type  White Hot │
  │ <Power Up Mode>     │          │ Profile          Night  │
  │ <Limit Stops>       │  ──────▶ │                         │
  │ <Other>             │          │ <Sharp/Contrast/Bias>   │
  │ <System Information>│          │ <Region of Interest>    │
  │ <Factory Defaults>  │          │ <Flat Field Correction> │
  │ Exit                │          │ Exit                    │
  │                     │          │                         │
  └─────────────────────┘          └─────────────────────────┘
```
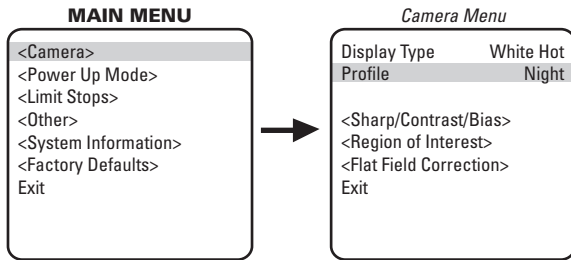
Profile lets you activate a specific group of settings (Sharpness, Hot Bias, Contrast, or AGC Mode), as follows:

• **Night, Day, Fog, Rain:** These four preconfigured groups of profile settings give the best factory-defined results for the scene. They also serve as a starting point when configuring profile settings for a specific installation.

• **Custom 1, Custom 2:** These two groups of profile settings are configured by the user. After changing one or more profile settings, use the Save Profile feature to save the custom profile settings (refer to *Save Profile* on page 44).

• **Modified:** This option appears in the Profile list whenever you change any profile setting (Sharpness, Hot Bias, Contrast, or AGC Mode). The camera saves all profile setting changes into memory, but it does not automatically save them to the Custom 1 or Custom 2 profiles. If you select a different profile without saving the profile setting changes, the new profile replaces the user profile settings.

The default is Night.
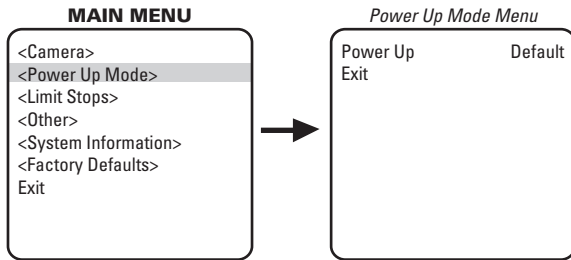
To select a profile:

1. Program preset 95 (28). The main menu appears.

2. Position the cursor (>) beside <Camera>. Press the Iris Open button; the menu appears.

3. Position the cursor (>) beside Profile. Press the Iris Open button; the cursor moves to the right.

4. Move the joystick up or down to view the available selections.

5. Do one of the following:
   • **Select:** Press the Iris Open button to select the option.
   • **Cancel:** Press the Iris Close button to leave the setting as is.

REGION OF INTEREST

MAIN MENU

<Camera>
<Power Up Mode>
<Limit Stops>
<Other>
<System Information>
<Factory Defaults>
Exit

Camera Menu

Display Type   White Hot
Profile   Night

<Sharp/Contrast/Bias>
<Region of Interest>
<Flat Field Correction>
Exit

Region of Interest Menu

ROI   Off

Region   Center*
Percent   50*
Exit
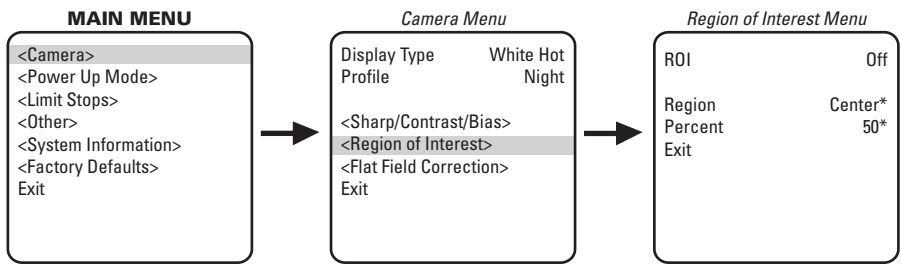
The Region of Interest (ROI) is similar to a light meter zone in a conventional camera. Use it when the heat image in one portion of the field of view affects the entire image.

The rest of this section describes how to use each ROI option. Use the following examples as guides for this feature:

TOP 80%

20%
40%   REGION OF INTEREST
60%
80%   DISREGARDED

CENTER 60%

30%   DISREGARDED
0%   REGION OF INTEREST
30%   DISREGARDED

BOTTOM 40%

80%   DISREGARDED
60%
40%
20%   REGION OF INTEREST

LEFT 60%

REGION OF INTEREST   DISREGARDED

20%   40%   60%   80%

RIGHT 60%

DISREGARDED   REGION OF INTEREST

80%   60%   40%   20%
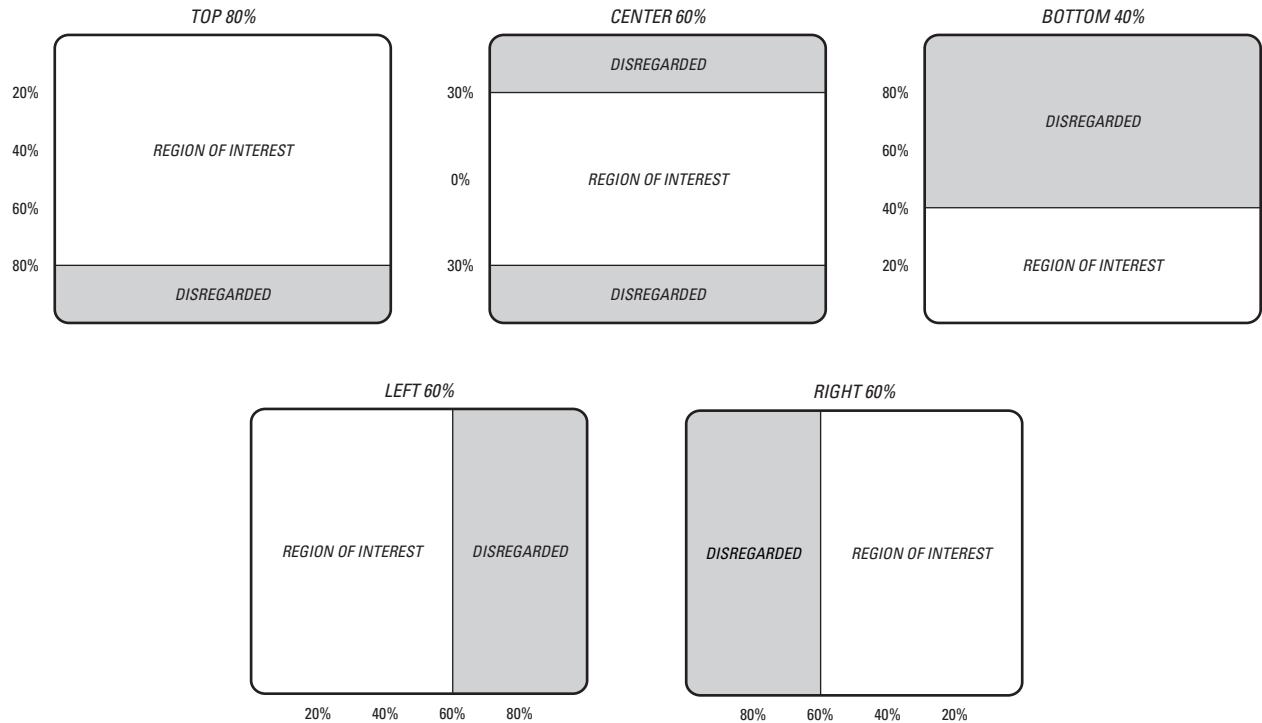
Figure 11. ROI Examples

NOTE: When ROI is set to Off, the camera uses the full screen as the region of interest.

*These options appear only when ROI is set to On.

ENABLING OR DISABLING ROI

You have to enable the ROI option before you can configure it. ROI is set to OFF by default.

To change the ROI:

1. Program preset 95 (28). The main menu appears.

2. Position the cursor (>) beside <Camera>. Press the Iris Open button; the menu appears.

3. Position the cursor (>) beside <Region of Interest>. Press the Iris Open button; the menu appears.

4. Position the cursor (>) beside ROI. Press the Iris Open button; the cursor moves to the right.

5. Move the joystick up or down to toggle between On and Off.

6. Do one of the following:
   - **Select:** Press the Iris Open button to select the option.
   - **Cancel:** Press the Iris Close button to leave the setting as is.

REGION

Region identifies the general location of the ROI in the image area. Available regions include the following:
- **Top:** Select this option to anchor the ROI to the top edge of the field of view.
- **Bottom:** Select this option to anchor the ROI to the bottom edge of the field of view.
- **Left:** Select this option to anchor the ROI to the left edge of the field of view.
- **Right:** Select this option to anchor the ROI to the right edge of the field of view.
- **Center:** Select this option to anchor the ROI to the vertical center of the field of view.

The default is Center.

To program the Region:

1. Program preset 95 (28). The main menu appears.

2. Position the cursor (>) beside <Camera>. Press the Iris Open button; the menu appears.

3. Position the cursor (>) beside <Region of Interest>. Press the Iris Open button; the menu appears.

4. Position the cursor (>) beside Region. Press the Iris Open button; the cursor moves to the right.

5. Move the joystick up or down until the desired Region setting appears.

6. Do one of the following:
   - **Select:** Press the Iris Open button to select the option.
   - **Cancel:** Press the Iris Close button to leave the setting as is.

PERCENT

Percent controls the size of the region of interest, starting from the selected Region position. You can select from 10 to 90 percent. The default is 50 (50 percent).

To program the Percent:

1. Program preset 95 (28). The main menu appears.

2. Position the cursor (>) beside <Camera>. Press the Iris Open button; the menu appears.

3. Position the cursor (>) beside <Region of Interest>. Press the Iris Open button; the menu appears.

4. Position the cursor (>) beside Percent. Press the Iris Open button; the cursor moves to the right.

5. Move the joystick up or down until the desired Percent setting appears.

6. Do one of the following:
   - **Select:** Press the Iris Open button to select the option.
   - **Cancel:** Press the Iris Close button to leave the setting as is.

RESET CAMERA

MAIN MENU

```
<Camera>
<Power Up Mode>
<Limit Stops>
<Other>
<System Information>
<Factory Defaults>
Exit
```

Factory Defaults Menu

```
Reset Camera
Restore Camera Defaults
Restore All Defaults
Exit
```
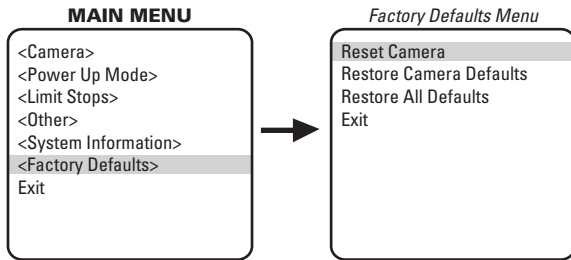
Resetting the camera restarts the camera. The camera peforms its normal power up process.

To reset the camera:

1. Program preset 95 (28). The main menu appears.

2. Position the cursor (>) beside <Factory Defaults>. Press the Iris Open button; the menu appears.

3. Position the cursor (>) beside Reset Camera.

4. Press the Iris Open button to reset the camera. The cursor briefly changes to an asterisk (*) while the camera resets.

RESTORE ALL DEFAULTS

MAIN MENU

```
<Camera>
<Power Up Mode>
<Limit Stops>
<Other>
<System Information>
<Factory Defaults>
Exit
```

Factory Defaults Menu

```
Reset Camera
Restore Camera Defaults
Restore All Defaults
Exit
```
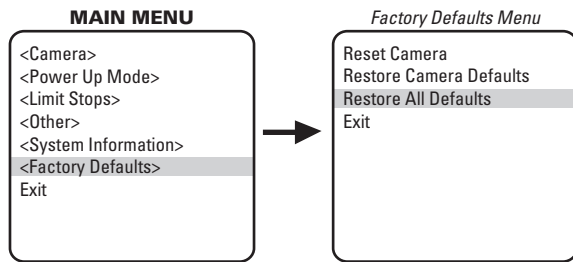
Restoring all defaults returns the settings on all menus and submenus to their defaults. This function also clears all presets and patterns.

Turning off power does not restore the camera to its default settings. Camera settings are retained in memory. When the power is turned back on, the settings will be the same as they were when the power was turned off.

⚠ **WARNING:** After restoring all defaults, you will have to configure all camera settings from their factory defaults.

To restore all defaults:

1. Program preset 95 (28). The main menu appears.

2. Position the cursor (>) beside <Factory Defaults>. Press the Iris Open button; the menu appears.

3. Position the cursor (>) beside Restore All Defaults.

4. Press the Iris Open button to restore all settings to their factory defaults. The cursor briefly changes to an asterisk (*) while the camera restores all default settings.

RESTORE CAMERA DEFAULTS

MAIN MENU

<Camera>
<Power Up Mode>
<Limit Stops>
<Other>
<System Information>
<Factory Defaults>
Exit

➜

Factory Defaults Menu

Reset Camera
Restore Camera Defaults
Restore All Defaults
Exit
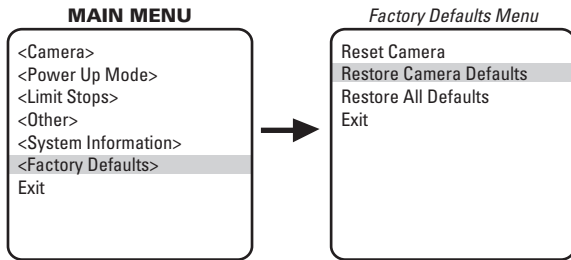
Restoring camera defaults returns the settings on the Camera menu and its submenus to their defaults. It does not restore any other settings.

Turning off power does not restore the settings on the Camera menu to their defaults. Camera settings are retained in memory. When the power is turned back on, the settings will be the same as they were when the power was turned off.

⚠ **WARNING:** After restoring camera defaults, you will have to configure all Camera menu settings from their factory defaults.

To restore camera defaults:

1. Program preset 95 (28). The main menu appears.

2. Position the cursor (>) beside <Factory Defaults>. Press the Iris Open button; the menu appears.

3. Position the cursor (>) beside Restore Camera Defaults.

4. Press the Iris Open button to restore camera settings to their factory defaults. The cursor briefly changes to an asterisk (*) while the camera restores the camera default settings.

SAVE PROFILE

MAIN MENU

MAIN MENU		*Camera Menu*		*Sharp/Contrast/Bias Menu*

```
    MAIN MENU                  Camera Menu                Sharp/Contrast/Bias Menu

<Camera>                   Display Type    White Hot    AGC Mode        Automatic
<Power Up Mode>            Profile             Night    Sharpness         Medium
<Limit Stops>                                           Contrast            64¹
<Other>                    <Sharp/Contrast/Bias>        Hot Bias           100¹
<System Information>       <Region of Interest>         Save Profile     Custom 1
<Factory Defaults>         <Flat Field Correction>      Exit
Exit                       Exit
```
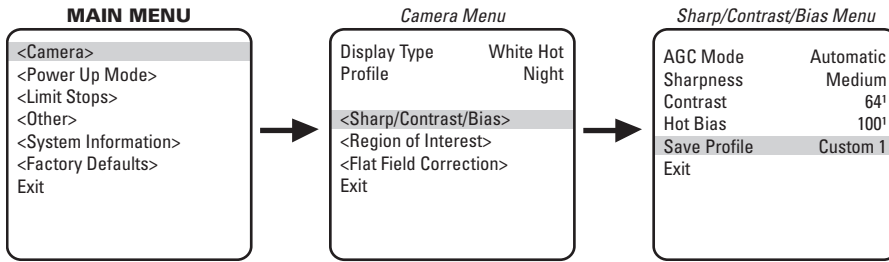
The Save Profile feature lets you save a user-defined group of profile settings into either the Custom 1 or the Custom 2 profile. When you change any profile setting (Sharpness, Hot Bias, Contrast, or AGC Mode), Modified becomes an option in the Profile list and you can save these custom settings.

To save a user-defined group of profile settings into a custom profile:

1. Program preset 95 (28). The main menu appears.

2. Position the cursor (>) beside <Camera>. Press the Iris Open button; the menu appears.

3. Position the cursor (>) beside <Sharp/Contrast/Bias>. Press the Iris Open button; the menu appears.

4. Position the cursor (>) beside Save Profile. Press the Iris Open button; the cursor moves to the right.

5. Move the joystick up or down to Custom 1 or Custom 2.

6. Do one of the following:
   - **Select:** Press the Iris Open button to save the settings into the selected profile.
   - **Cancel:** Press the Iris Close button to leave the selected profile unchanged.

7. Use the Profile feature to select either Custom 1 or Custom 2 (refer to *Profile* on page 38).

SCAN SPEED

```
        MAIN MENU                      Other Menu
┌────────────────────┐      ┌────────────────────────────┐
│ <Camera>           │      │ Temp Units        Celsius  │
│ <Power Up Mode>    │      │ Park time minutes       0  │
│ <Limit Stops>      │      │ Scan Speed deg/s        7  │
│ <Other>            │ ───► │ Pattern Length     1.5 min │
│ <System Information>│     │ Spd Profile   90 MPH Wind  │
│ <Factory Defaults> │      │ <Zone Blank>               │
│ Exit               │      │ <Az/El/Direction>          │
│                    │      │ Exit                       │
└────────────────────┘      └────────────────────────────┘
```
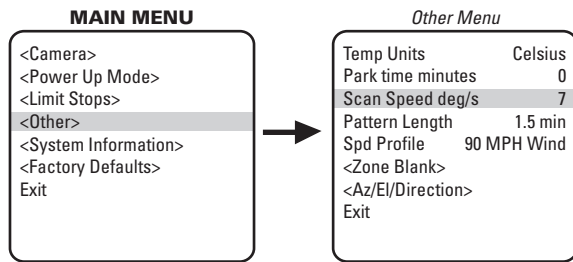
Scan speed controls the movement speed in auto, random, and frame scan modes. You can select from 1 to 40 degrees per second. The default is 7.

To change the scan speed:

1. Program preset 95 (28). The main menu appears.

2. Position the cursor (>) beside <Other>. Press the Iris Open button; the menu appears.

3. Position the cursor (>) beside Scan Speed deg/s. Press the Iris Open button; the cursor moves to the right.

4. Move the joystick up or down until the desired Scan Speed setting appears.

5. Do one of the following:
   • **Select:** Press the Iris Open button to select the option.
   • **Cancel:** Press the Iris Close button to leave the setting as is.

NOTE: If you set the speed to a low number, the scan will barely move. If your unit scans slowly, check the scan speed setting.

SHARPNESS

```
        MAIN MENU                    Camera Menu                  Sharp/Contrast/Bias Menu

  <Camera>                    Display Type      White Hot      AGC Mode       Automatic
  <Power Up Mode>             Profile               Night      Sharpness         Medium
  <Limit Stops>                                                Contrast             64*
  <Other>                     <Sharp/Contrast/Bias>            Hot Bias            100*
  <System Information>        <Region of Interest>             Save Profile    Custom 1
  <Factory Defaults>          <Flat Field Correction>          Exit
  Exit                        Exit
```
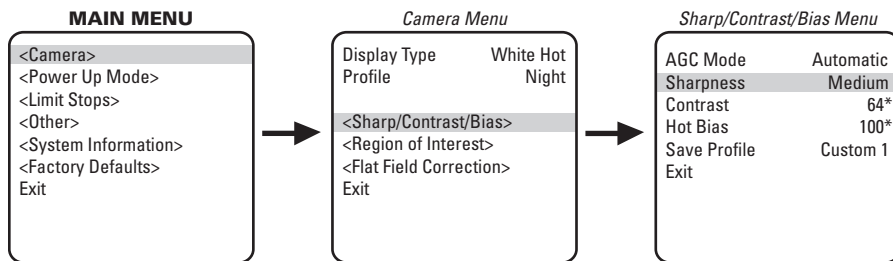
Use the Sharpness setting to set the digital sharpness of the camera. Settings include Lowest, Low, Medium, High, and Highest. The default is Medium.

Increasing the Sharpness setting can enhance image detail in some scenes; higher Sharpness settings also increase image noise. Decreasing the Sharpness setting can soften image detail in some scenes, that is, lose some image detail; however, lower Sharpness settings also decrease image noise. Select the setting that is best for the scene.

NOTE: You can change the Sharpness setting when AGC Mode is set to either Automatic or Manual.

To set the sharpness of the camera:

1. Program preset 95 (28). The main menu appears.

2. Position the cursor (>) beside <Camera>. Press the Iris Open button; the menu appears.

3. Position the cursor (>) beside <Sharp/Contrast/Bias>. Press the Iris Open button; the menu appears.

4. Position the cursor (>) beside Sharpness. Press the Iris Open button; the cursor moves to the right.

5. Move the joystick up or down until the desired Sharpness setting appears. As you move through settings, the sharpness changes on the monitor.

6. Do one of the following:
   • **Select:** Press the Iris Open button to select the option.
   • **Cancel:** Press the Iris Close button to leave the setting as is.

NOTE: You can also adjust the Sharpness setting by using the Focus Near and Focus Far buttons on your controller (refer to *How to Operate Your System* on page 14).

*These options only appear when AGC Mode is set to Manual.

SPEED PROFILE

```
       MAIN MENU                    Other Menu
┌─────────────────────┐      ┌─────────────────────────┐
│ <Camera>            │      │ Temp Units      Celsius │
│ <Power Up Mode>     │      │ Park time minutes     0 │
│ <Limit Stops>       │      │ Scan Speed deg/s      7 │
│ <Other>             │ ───▶ │ Pattern Length  1.5 min │
│ <System Information>│      │ Spd Profile  90 MPH Wind│
│ <Factory Defaults>  │      │ <Zone Blank>            │
│ Exit                │      │ <Az/El/Direction>       │
│                     │      │ Exit                    │
└─────────────────────┘      └─────────────────────────┘
```

Use this feature to set the wind speed conditions for the location of the Esprit system. High winds may intefere with high speed turbo and preset panning. The speed profile provides the best panning speed for the wind conditions.

You can set two wind speed profiles:

- **50 MPH Wind:** Turbo and preset pan speeds are 100 degrees per second. In low wind conditions, the system has enough torque to pan at this higher speed.

- **90 MPH Wind** Turbo and preset pan speeds are 50 degrees per second. In high wind conditions, the system has enough torque to pan at this lower speed.

NOTE: For more information about Turbo Mode, refer to *Turbo Mode* on page 15.

The maximum pan speed in regular (non-turbo) mode for either wind speed profile is 40 degrees per second.

The default is 90 MPH Wind.

To set the speed profile:

1. Program preset 95 (28). The main menu appears.

2. Position the cursor (>) beside <Other>. Press the Iris Open button; the menu appears.

3. Position the cursor (>) beside Spd Profile. Press the Iris Open button; the cursor moves to the right.

4. Move the joystick up or down to toggle between 50 MPH Wind and 90 MPH Wind.

5. Do one of the following:
   - **Select:** Press the Iris Open button to select the option.
   - **Cancel:** Press the Iris Close button to leave the setting as is.

TEMP UNITS

MAIN MENU

```
<Camera>
<Power Up Mode>
<Limit Stops>
<Other>
<System Information>
<Factory Defaults>
Exit
```

Other Menu

```
Temp Units          Celsius
Park time minutes        0
Scan Speed deg/s         7
Pattern Length      1.5 min
Spd Profile    90 MPH Wind
<Zone Blank>
<Az/El/Direction>
Exit
```
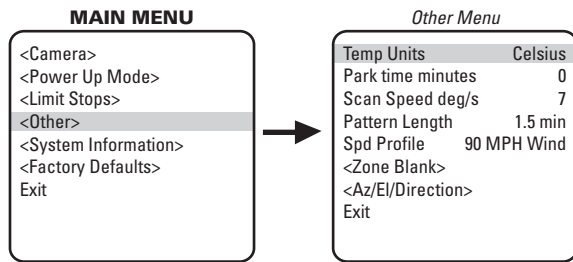
The Temp Units setting controls how temperature values are displayed. You can select either Celsius or Fahrenheit. The default is Celsius.
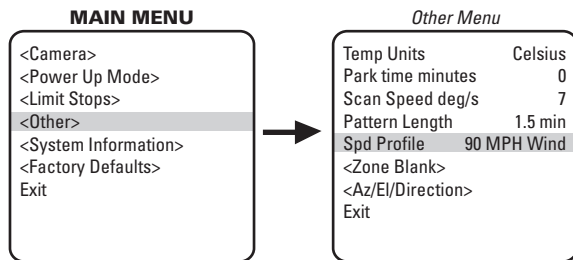
To change the temp units setting:

1. Program preset 95 (28). The main menu appears.

2. Position the cursor (>) beside <Other>. Press the Iris Open button; the menu appears.

3. Position the cursor (>) beside Temp Units. Press the Iris Open button; the cursor moves to the right.

4. Move the joystick up or down to toggle between Celsius and Fahrenheit.

5. Do one of the following:
   - **Select:** Press the Iris Open button to select the option.
   - **Cancel:** Press the Iris Close button to leave the setting as is.

ZONES

Basic rules for setting zones:

1. Your controller must support zone operation.

2. Refer to the documentation for your control system to program zones.

3. Establish zones using the controller, before programming ZONE BLANK with the Esprit on-screen menu.

4. To accurately set zone areas, press Zoom Wide to zoom to the full screen.

5. Set zones moving the joystick left to right. The left position is always the start position.

ZONE BLANK

```
        MAIN MENU                    Other Menu                    Zone Blank Menu

  <Camera>                    Temp Units        Celsius       Video Blank Zone     1 Off
  <Power Up Mode>             Park time minutes       0                            2 Off
  <Limit Stops>              Scan Speed deg/s          7                            3 Off
  <Other>                    Pattern Length     1.5 min                            4 Off
  <System Information>       Spd Profile    90 MPH Wind                            5 Off
  <Factory Defaults>         <Zone Blank>                                          6 Off
  Exit                       <Az/El/Direction>                                     7 Off
                             Exit                                                  8 Off
                                                                Exit
```

The Esprit system features on-screen programmable zone blanking. This feature lets you define any zone as blanked for video (viewing and recording).

Zones can be programmed to overlap each other, although this is not recommended. If you program two zones to overlap, the title of the zone with the highest priority (zone 8 is the highest, zone 1 is the lowest) will be displayed on the monitor. This rule also applies to blanked zones that overlap. The blanking status of the zone with the highest priority will determine if the area is blanked or not.

For Example: Zone 1 is blanked but a portion of the zone overlaps zone 8 which is not blanked. The overlapped portion of zone 1 will be displayed on the monitor with the zone 8 label.

There are two video zone blank settings:
• **On:** Enables video blanking.
• **Off:** Disables video blanking.
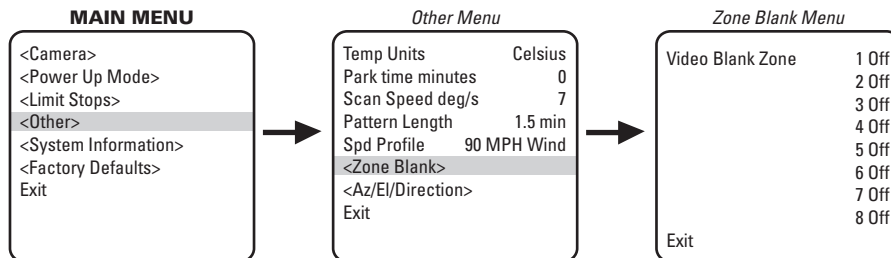
To change the video blank zone setting:

1. Program preset 95 (28). The main menu appears.

2. Position the cursor (>) beside <Other>. Press the Iris Open button; the menu appears.

3. Position the cursor (>) beside <Zone Blank>. Press the Iris Open button; the menu appears.

4. Position the cursor (>) beside the number of the zone for which you want to set the blank option. Press the Iris Open button; the cursor moves to the right.

5. Move the joystick up or down to toggle between On and Off.

6. Do one of the following:
   • **Select:** Press the Iris Open button to select the option.
   • **Cancel:** Press the Iris Close button to leave the setting as is.

ZOOM

```
       MAIN MENU                   Other Menu                      Az/El/Direction
  ┌─────────────────────┐    ┌───────────────────────────┐    ┌───────────────────────────┐
  │ <Camera>            │    │ Temp Units        Celsius │    │ Set Azimuth Zero          │
  │ <Power Up Mode>     │    │ Park time minutes       0 │    │ Az/El               Left  │
  │ <Limit Stops>       │    │ Scan Speed deg/s        7 │    │ Az/El Line            10  │
  │ <Other>             │ ──▶│ Pattern Length    1.5 min │ ──▶│ Direction           Right │
  │ <System Information>│    │ Spd Profile  90 MPH Wind  │    │ Direction Line        10  │
  │ <Factory Defaults>  │    │ <Zone Blank>              │    │ Zoom              Center  │
  │ Exit                │    │ <Az/El/Direction>         │    │ Zoom Line             10  │
  │                     │    │ Exit                      │    │ Disp Duration          2  │
  └─────────────────────┘    └───────────────────────────┘    │ Exit                      │
                                                               └───────────────────────────┘
```
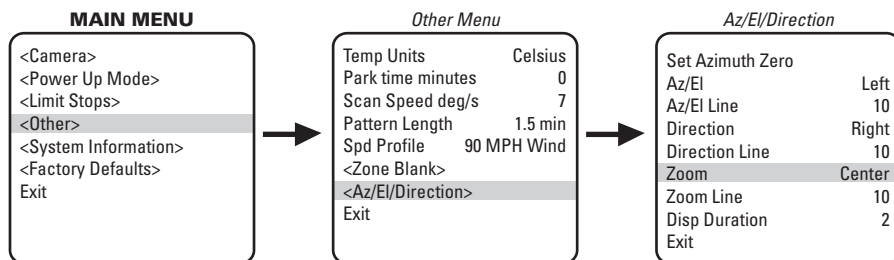
Zoom programs the horizontal display position of the Zoom label. The following settings are available for the Zoom label:

- **Off:** Label is not displayed.
- **Left:** Label is displayed on the left-hand side of the screen.
- **Center:** Label is displayed in the center of the screen.
- **Right:** Label is displayed on the right-hand side of the screen.

The default is Center.

NOTES:

- Zoom display is not available while you are programming or running a pattern.
- Use different horizontal position and line settings for Az/El, Direction, and Zoom. Otherwise, the labels may overwrite one another.

To program the horizontal label position for zoom:

1. Program preset 95 (28). The main menu appears.

2. Position the cursor (>) beside <Other>. Press the Iris Open button; the menu appears.

3. Position the cursor (>) beside <Az/El/Direction>. Press the Iris Open button; the menu appears.

4. Position the cursor (>) beside Zoom. Press the Iris Open button; the cursor moves to the right.

5. Move the joystick up or down to view the available selections.

6. Do one of the following:
   - **Select:** Press the Iris Open button to select the option.
   - **Cancel:** Press the Iris Close button to leave the setting as is.

ZOOM LINE

```
         MAIN MENU                    Other Menu                        Az/El/Direction

  <Camera>                     Temp Units          Celsius       Set Azimuth Zero
  <Power Up Mode>              Park time minutes         0       Az/El                    Left
  <Limit Stops>                Scan Speed deg/s          7       Az/El Line                 10
  <Other>                      Pattern Length      1.5 min       Direction               Right
  <System Information>         Spd Profile    90 MPH Wind        Direction Line             10
  <Factory Defaults>           <Zone Blank>                      Zoom                   Center
  Exit                         <Az/El/Direction>                 Zoom Line                  10
                               Exit                              Disp Duration               2
                                                                 Exit
```

Zoom Line controls the vertical display position of the Zoom label. You can display the label on lines 3 through 10.

Line 3 is the third line from the top of the screen; line 10 is located at the bottom of the screen. The default is 10.
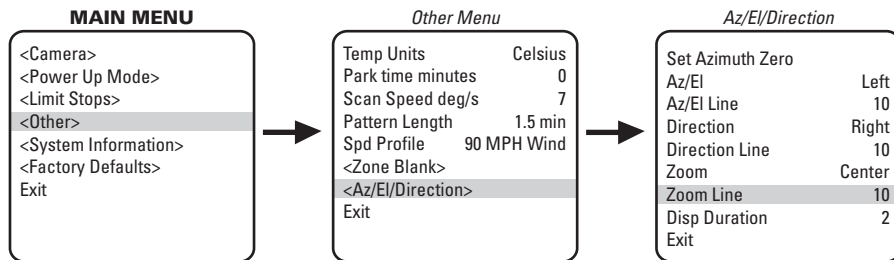
NOTES:

- Zoom display is not available while you are programming or running a pattern.

- Use different horizontal position and line settings for Az/El, Direction, and Zoom. Otherwise, the labels may overwrite one another.

To program the vertical label position for zoom:

1. Program preset 95 (28). The main menu appears.

2. Position the cursor (>) beside <Other>. Press the Iris Open button; the menu appears.

3. Position the cursor (>) beside <Az/El/Direction>. Press the Iris Open button; the menu appears.

4. Position the cursor (>) beside Zoom Line. Press the Iris Open button; the cursor moves to the right.

5. Move the joystick up or down to view the available selections.

6. Do one of the following:
   - **Select:** Press the Iris Open button to select the option.
   - **Cancel:** Press the Iris Close button to leave the setting as is.

Maintenance and Troubleshooting

MAINTENANCE

Clean the enclosure window periodically with a mild nonabrasive detergent in water and a soft cloth to help maintain picture clarity.

TROUBLESHOOTING

NOTE: The system contains no user-serviceable parts. If there is a problem with your system, it must be returned to Pelco for servicing.

Symptom: Degrading video quality

From time to time, image quality may degrade.

1. Perform a manual FFC. After manually performing this process, the camera restarts the frequency clock and resets the baseline temperature (refer to *Flat Field Correction (FFC)* on page 29).

2. If the problem persists, perform the troubleshooting steps for *Symptom: No video or poor video* on page 53.

Symptom: System does not operate

1. Check system input voltage.

2. The Esprit system is protected by a resettable overcurrent protective device located in the transformer module. Whenever a fault condition is experienced in the system causing excessive current flow through the protective device, a change occurs that will prevent current flow. The protective device will remain in this state as long as power is applied and the system fault remains. The protective device will reset itself after power has been removed for a few minutes and will operate normally when the system fault has been repaired.

3. Check the system power and video BNC connections.

Symptom: No control/sluggish control (Coaxitron)

1. Check for correct type and length of coaxial cable.

2. Check for correct coaxial termination (refer to the controller manual to determine proper termination of video input). Normal load termination is 75 ohms. When looping through VCRs or multiplexers, make sure the signal is terminated at the end device. Some termination symptoms and problems are listed below.

Symptom	Problem
Extremely bright video	No termination or high resistance
Over contrast or contrast level of monitor needs to be increased to maximum for a good video image	Double termination (37.5 ohms)

3. If pan/tilt operation is sluggish, check the controller manual to make sure the control signal is set in the extended mode, not standard mode.

Symptom: No control (RS-422/RS-485)

1. Check for correct cable type and length. The maximum cable distance for RS-422 communication over 24-gauge wire is 4,000 feet (1,219 m). Pelco recommends using shielded twisted pairs, such as Belden 9843 or similar cable, that meets or exceeds the basic requirements for EIA RS-422 or RS-485 applications.

2. Check for correct wire connections between transmitting device (such as the CM6700 Series matrix system) and Esprit system receiver. Correct connections are from the transmitting device TX+ to Esprit system RX+ and from the transmitting device TX- to Esprit system RX-.

3. Check for correct DIP switch settings.

Symptom: Ground loops

Ground loops are indicated by seeing 60 Hz noise on the video.

1. Check for resistance between the grounds of the keyboard and the system. Ideally, there should be zero ohms.

2. Remove the coaxial BNC connector and check for voltage between the BNC shield of the controller and the BNC shield of the system. No voltage should be detected.

It is recommended that a Pelco GIT100 ground isolation transformer be installed to eliminate the above problems.

Symptom: No video or poor video

1. Check the system power and video BNC connections.

2. Check all coaxial BNC connectors from the camera to the monitor.

3. Make sure the controller is set for the correct camera-to-monitor viewing combination; for example, Camera 1 to Monitor 1. Refer to the controller manual for information.

4. Check for normal load termination of 75 ohms. When looping through VCRs or multiplexers, make sure the signal is terminated at the end device. Some termination symptoms and problems are listed below.

Symptom	Problem
Extremely bright video	No termination or high resistance
Over contrast or contrast level of monitor needs to be increased to maximum for a good video image	Double termination (37.5 ohms)

Symptom: Unable to view activity through glass

When the camera is pointed to a window, it cannot pick up any activity behind the glass. This is a limitation of thermal imaging technology.

Appendix

NOTE: Esprit will sense and automatically select input from Coaxitron control signals in either the standard or extended mode. Therefore, the DIP switch settings have no effect on Coaxitron control signals.

Table A. Switch Settings for SW1

Baud Rate	Switch Setting		
	SW1-1	**SW1-2**	**SW1-3**
2400	OFF	OFF	OFF*
4800	ON	OFF	OFF*
9600	OFF	ON	OFF*

*SW1-3 is not used; set it in the OFF position.

Table B. Switch Settings for SW2

Switch Setting				
SW1-4	**SW1-5**	**SW1-6**	**SW1-7**	**SW1-8**
OFF*	**Note (1)**	**Note (2)**	**Note (3)**	**Note (4)**

NOTES:
 (1) SW1-5 OFF For controllers with more than 32 presets.
              ON For American Dynamics controllers (32 presets).
 (2) SW1-6 OFF For all control systems except CM9502 with variable speed keyboards. For CM9502
                        with fixed speed keyboards, set to OFF.
              ON For CM9502 with variable speed keyboards for smoother joystick control.
 (3) SW1-7 OFF RS-422 transmitter is not terminated.
              ON RS-422 transmitter is terminated.
 (4) SW1-8 OFF 1.2 Vp-p video level.
              ON 1.0 Vp-p video level.				

*SW1-4 is not used; set it in the OFF position.

NOTE: The Esprit will sense and automatically select input from Coaxitron control signals in either the standard or extended mode. Therefore, the DIP switches settings have no effect on Coaxitron control signals.

Table C. Switch Settings for SW2   **Table C.** Switch Settings for SW2 *(Continued)*

Receiver Address P-Type Control	Receiver Address D-Type Control	SW2-1	SW2-2	SW2-3	SW2-4	SW2-5	SW2-6	SW2-7	SW2-8
1	–	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF
2	1	ON	OFF	OFF	OFF	OFF	OFF	OFF	OFF
3	2	OFF	ON	OFF	OFF	OFF	OFF	OFF	OFF
4	3	ON	ON	OFF	OFF	OFF	OFF	OFF	OFF
5	4	OFF	OFF	ON	OFF	OFF	OFF	OFF	OFF
6	5	ON	OFF	ON	OFF	OFF	OFF	OFF	OFF
7	6	OFF	ON	ON	OFF	OFF	OFF	OFF	OFF
8	7	ON	ON	ON	OFF	OFF	OFF	OFF	OFF
9	8	OFF	OFF	OFF	ON	OFF	OFF	OFF	OFF
10	9	ON	OFF	OFF	ON	OFF	OFF	OFF	OFF
11	10	OFF	ON	OFF	ON	OFF	OFF	OFF	OFF
12	11	ON	ON	OFF	ON	OFF	OFF	OFF	OFF
13	12	OFF	OFF	ON	ON	OFF	OFF	OFF	OFF
14	13	ON	OFF	ON	ON	OFF	OFF	OFF	OFF
15	14	OFF	ON	ON	ON	OFF	OFF	OFF	OFF
16	15	ON	ON	ON	ON	OFF	OFF	OFF	OFF
17	16	OFF	OFF	OFF	OFF	ON	OFF	OFF	OFF
18	17	ON	OFF	OFF	OFF	ON	OFF	OFF	OFF
19	18	OFF	ON	OFF	OFF	ON	OFF	OFF	OFF
20	19	ON	ON	OFF	OFF	ON	OFF	OFF	OFF
21	20	OFF	OFF	ON	OFF	ON	OFF	OFF	OFF
22	21	ON	OFF	ON	OFF	ON	OFF	OFF	OFF
23	22	OFF	ON	ON	OFF	ON	OFF	OFF	OFF
24	23	ON	ON	ON	OFF	ON	OFF	OFF	OFF
25	24	OFF	OFF	OFF	ON	ON	OFF	OFF	OFF
26	25	ON	OFF	OFF	ON	ON	OFF	OFF	OFF
27	26	OFF	ON	OFF	ON	ON	OFF	OFF	OFF
28	27	ON	ON	OFF	ON	ON	OFF	OFF	OFF
29	28	OFF	OFF	ON	ON	ON	OFF	OFF	OFF
30	29	ON	OFF	ON	ON	ON	OFF	OFF	OFF
31	30	OFF	ON	ON	ON	ON	OFF	OFF	OFF
32	31	ON	ON	ON	ON	ON	OFF	OFF	OFF
–	32	OFF	OFF	OFF	OFF	OFF	ON	OFF	OFF
–	33	ON	OFF	OFF	OFF	OFF	ON	OFF	OFF
–	34	OFF	ON	OFF	OFF	OFF	ON	OFF	OFF
–	35	ON	ON	OFF	OFF	OFF	ON	OFF	OFF
–	36	OFF	OFF	ON	OFF	OFF	ON	OFF	OFF
–	37	ON	OFF	ON	OFF	OFF	ON	OFF	OFF
–	38	OFF	ON	ON	OFF	OFF	ON	OFF	OFF
–	39	ON	ON	ON	OFF	OFF	ON	OFF	OFF
–	40	OFF	OFF	OFF	ON	OFF	ON	OFF	OFF
–	41	ON	OFF	OFF	ON	OFF	ON	OFF	OFF
–	42	OFF	ON	OFF	ON	OFF	ON	OFF	OFF
–	43	ON	ON	OFF	ON	OFF	ON	OFF	OFF
–	44	OFF	OFF	ON	ON	OFF	ON	OFF	OFF
–	45	ON	OFF	ON	ON	OFF	ON	OFF	OFF
–	46	OFF	ON	ON	ON	OFF	ON	OFF	OFF
–	47	ON	ON	ON	ON	OFF	ON	OFF	OFF
–	48	OFF	OFF	OFF	OFF	ON	ON	OFF	OFF
–	49	ON	OFF	OFF	OFF	ON	ON	OFF	OFF
–	50	OFF	ON	OFF	OFF	ON	ON	OFF	OFF
–	51	ON	ON	OFF	OFF	ON	ON	OFF	OFF
–	52	OFF	OFF	ON	OFF	ON	ON	OFF	OFF
–	53	ON	OFF	ON	OFF	ON	ON	OFF	OFF
–	54	OFF	ON	ON	OFF	ON	ON	OFF	OFF
–	55	ON	ON	ON	OFF	ON	ON	OFF	OFF
–	56	OFF	OFF	OFF	ON	ON	ON	OFF	OFF
–	57	ON	OFF	OFF	ON	ON	ON	OFF	OFF
–	58	OFF	ON	OFF	ON	ON	ON	OFF	OFF
–	59	ON	ON	OFF	ON	ON	ON	OFF	OFF
–	60	OFF	OFF	ON	ON	ON	ON	OFF	OFF
–	61	ON	OFF	ON	ON	ON	ON	OFF	OFF
–	62	OFF	ON	ON	ON	ON	ON	OFF	OFF
–	63	ON	ON	ON	ON	ON	ON	OFF	OFF
–	64	OFF	OFF	OFF	OFF	OFF	OFF	ON	OFF
–	65	ON	OFF	OFF	OFF	OFF	OFF	ON	OFF
–	66	OFF	ON	OFF	OFF	OFF	OFF	ON	OFF
–	67	ON	ON	OFF	OFF	OFF	OFF	ON	OFF
–	68	OFF	OFF	ON	OFF	OFF	OFF	ON	OFF
–	69	ON	OFF	ON	OFF	OFF	OFF	ON	OFF
–	70	OFF	ON	ON	OFF	OFF	OFF	ON	OFF
–	71	ON	ON	ON	OFF	OFF	OFF	ON	OFF
–	72	OFF	OFF	OFF	ON	OFF	OFF	ON	OFF
–	73	ON	OFF	OFF	ON	OFF	OFF	ON	OFF
–	74	OFF	ON	OFF	ON	OFF	OFF	ON	OFF
–	75	ON	ON	OFF	ON	OFF	OFF	ON	OFF
–	76	OFF	OFF	ON	ON	OFF	OFF	ON	OFF
–	77	ON	OFF	ON	ON	OFF	OFF	ON	OFF
–	78	OFF	ON	ON	ON	OFF	OFF	ON	OFF
–	79	ON	ON	ON	ON	OFF	OFF	ON	OFF
–	80	OFF	OFF	OFF	OFF	ON	OFF	ON	OFF
–	81	ON	OFF	OFF	OFF	ON	OFF	ON	OFF
–	82	OFF	ON	OFF	OFF	ON	OFF	ON	OFF
–	83	ON	ON	OFF	OFF	ON	OFF	ON	OFF
–	84	OFF	OFF	ON	OFF	ON	OFF	ON	OFF
–	85	ON	OFF	ON	OFF	ON	OFF	ON	OFF
–	86	OFF	ON	ON	OFF	ON	OFF	ON	OFF
–	87	ON	ON	ON	OFF	ON	OFF	ON	OFF
–	88	OFF	OFF	OFF	ON	ON	OFF	ON	OFF
–	89	ON	OFF	OFF	ON	ON	OFF	ON	OFF
–	90	OFF	ON	OFF	ON	ON	OFF	ON	OFF
–	91	ON	ON	OFF	ON	ON	OFF	ON	OFF
–	92	OFF	OFF	ON	ON	ON	OFF	ON	OFF
–	93	ON	OFF	ON	ON	ON	OFF	ON	OFF
–	94	OFF	ON	ON	ON	ON	OFF	ON	OFF
–	95	ON	ON	ON	ON	ON	OFF	ON	OFF
–	96	OFF	OFF	OFF	OFF	OFF	ON	ON	OFF
–	97	ON	OFF	OFF	OFF	OFF	ON	ON	OFF
–	98	OFF	ON	OFF	OFF	OFF	ON	ON	OFF
–	99	ON	ON	OFF	OFF	OFF	ON	ON	OFF
–	100	OFF	OFF	ON	OFF	OFF	ON	ON	OFF
–	101	ON	OFF	ON	OFF	OFF	ON	ON	OFF
–	102	OFF	ON	ON	OFF	OFF	ON	ON	OFF
–	103	ON	ON	ON	OFF	OFF	ON	ON	OFF
–	104	OFF	OFF	OFF	ON	OFF	ON	ON	OFF
–	105	ON	OFF	OFF	ON	OFF	ON	ON	OFF
–	106	OFF	ON	OFF	ON	OFF	ON	ON	OFF
–	107	ON	ON	OFF	ON	OFF	ON	ON	OFF
–	108	OFF	OFF	ON	ON	OFF	ON	ON	OFF
–	109	ON	OFF	ON	ON	OFF	ON	ON	OFF
–	110	OFF	ON	ON	ON	OFF	ON	ON	OFF
–	111	ON	ON	ON	ON	OFF	ON	ON	OFF

Table C. Switch Settings for SW2 *(Continued)*

Receiver Address P-Type Control	D-Type Control	Switch Setting SW2-1	SW2-2	SW2-3	SW2-4	SW2-5	SW2-6	SW2-7	SW2-8
–	112	OFF	OFF	OFF	OFF	ON	ON	ON	OFF
–	113	ON	OFF	OFF	OFF	ON	ON	ON	OFF
–	114	OFF	ON	OFF	OFF	ON	ON	ON	OFF
–	115	ON	ON	OFF	OFF	ON	ON	ON	OFF
–	116	OFF	OFF	ON	OFF	ON	ON	ON	OFF
–	117	ON	OFF	ON	OFF	ON	ON	ON	OFF
–	118	OFF	ON	ON	OFF	ON	ON	ON	OFF
–	119	ON	ON	ON	OFF	ON	ON	ON	OFF
–	120	OFF	OFF	OFF	ON	ON	ON	ON	OFF
–	121	ON	OFF	OFF	ON	ON	ON	ON	OFF
–	122	OFF	ON	OFF	ON	ON	ON	ON	OFF
–	123	ON	ON	OFF	ON	ON	ON	ON	OFF
–	124	OFF	OFF	ON	ON	ON	ON	ON	OFF
–	125	ON	OFF	ON	ON	ON	ON	ON	OFF
–	126	OFF	ON	ON	ON	ON	ON	ON	OFF
–	127	ON	ON	ON	ON	ON	ON	ON	OFF
–	128	OFF	OFF	OFF	OFF	OFF	OFF	OFF	ON
–	129	ON	OFF	OFF	OFF	OFF	OFF	OFF	ON
–	130	OFF	ON	OFF	OFF	OFF	OFF	OFF	ON
–	131	ON	ON	OFF	OFF	OFF	OFF	OFF	ON
–	132	OFF	OFF	ON	OFF	OFF	OFF	OFF	ON
–	133	ON	OFF	ON	OFF	OFF	OFF	OFF	ON
–	134	OFF	ON	ON	OFF	OFF	OFF	OFF	ON
–	135	ON	ON	ON	OFF	OFF	OFF	OFF	ON
–	136	OFF	OFF	OFF	ON	OFF	OFF	OFF	ON
–	137	ON	OFF	OFF	ON	OFF	OFF	OFF	ON
–	138	OFF	ON	OFF	ON	OFF	OFF	OFF	ON
–	139	ON	ON	OFF	ON	OFF	OFF	OFF	ON
–	140	OFF	OFF	ON	ON	OFF	OFF	OFF	ON
–	141	ON	OFF	ON	ON	OFF	OFF	OFF	ON
–	142	OFF	ON	ON	ON	OFF	OFF	OFF	ON
–	143	ON	ON	ON	ON	OFF	OFF	OFF	ON
–	144	OFF	OFF	OFF	OFF	ON	OFF	OFF	ON
–	145	ON	OFF	OFF	OFF	ON	OFF	OFF	ON
–	146	OFF	ON	OFF	OFF	ON	OFF	OFF	ON
–	147	ON	ON	OFF	OFF	ON	OFF	OFF	ON
–	148	OFF	OFF	ON	OFF	ON	OFF	OFF	ON
–	149	ON	OFF	ON	OFF	ON	OFF	OFF	ON
–	150	OFF	ON	ON	OFF	ON	OFF	OFF	ON
–	151	ON	ON	ON	OFF	ON	OFF	OFF	ON
–	152	OFF	OFF	OFF	ON	ON	OFF	OFF	ON
–	153	ON	OFF	OFF	ON	ON	OFF	OFF	ON
–	154	OFF	ON	OFF	ON	ON	OFF	OFF	ON
–	155	ON	ON	OFF	ON	ON	OFF	OFF	ON
–	156	OFF	OFF	ON	ON	ON	OFF	OFF	ON
–	157	ON	OFF	ON	ON	ON	OFF	OFF	ON
–	158	OFF	ON	ON	ON	ON	OFF	OFF	ON
–	159	ON	ON	ON	ON	ON	OFF	OFF	ON
–	160	OFF	OFF	OFF	OFF	OFF	ON	OFF	ON
–	161	ON	OFF	OFF	OFF	OFF	ON	OFF	ON
–	162	OFF	ON	OFF	OFF	OFF	ON	OFF	ON
–	163	ON	ON	OFF	OFF	OFF	ON	OFF	ON
–	164	OFF	OFF	ON	OFF	OFF	ON	OFF	ON
–	165	ON	OFF	ON	OFF	OFF	ON	OFF	ON
–	166	OFF	ON	ON	OFF	OFF	ON	OFF	ON
–	167	ON	ON	ON	OFF	OFF	ON	OFF	ON
–	168	OFF	OFF	OFF	ON	OFF	ON	OFF	ON
–	169	ON	OFF	OFF	ON	OFF	ON	OFF	ON
–	170	OFF	ON	OFF	ON	OFF	ON	OFF	ON
–	171	ON	ON	OFF	ON	OFF	ON	OFF	ON

Receiver Address P-Type Control	D-Type Control	Switch Setting SW2-1	SW2-2	SW2-3	SW2-4	SW2-5	SW2-6	SW2-7	SW2-8
–	172	OFF	OFF	ON	ON	OFF	ON	OFF	ON
–	173	ON	OFF	ON	ON	OFF	ON	OFF	ON
–	174	OFF	ON	ON	ON	OFF	ON	OFF	ON
–	175	ON	ON	ON	ON	OFF	ON	OFF	ON
–	176	OFF	OFF	OFF	OFF	ON	ON	OFF	ON
–	177	ON	OFF	OFF	OFF	ON	ON	OFF	ON
–	178	OFF	ON	OFF	OFF	ON	ON	OFF	ON
–	179	ON	ON	OFF	OFF	ON	ON	OFF	ON
–	180	OFF	OFF	ON	OFF	ON	ON	OFF	ON
–	181	ON	OFF	ON	OFF	ON	ON	OFF	ON
–	182	OFF	ON	ON	OFF	ON	ON	OFF	ON
–	183	ON	ON	ON	OFF	ON	ON	OFF	ON
–	184	OFF	OFF	OFF	ON	ON	ON	OFF	ON
–	185	ON	OFF	OFF	ON	ON	ON	OFF	ON
–	186	OFF	ON	OFF	ON	ON	ON	OFF	ON
–	187	ON	ON	OFF	ON	ON	ON	OFF	ON
–	188	OFF	OFF	ON	ON	ON	ON	OFF	ON
–	189	ON	OFF	ON	ON	ON	ON	OFF	ON
–	190	OFF	ON	ON	ON	ON	ON	OFF	ON
–	191	ON	ON	ON	ON	ON	ON	OFF	ON
–	192	OFF	OFF	OFF	OFF	OFF	OFF	ON	ON
–	193	ON	OFF	OFF	OFF	OFF	OFF	ON	ON
–	194	OFF	ON	OFF	OFF	OFF	OFF	ON	ON
–	195	ON	ON	OFF	OFF	OFF	OFF	ON	ON
–	196	OFF	OFF	ON	OFF	OFF	OFF	ON	ON
–	197	ON	OFF	ON	OFF	OFF	OFF	ON	ON
–	198	OFF	ON	ON	OFF	OFF	OFF	ON	ON
–	199	ON	ON	ON	OFF	OFF	OFF	ON	ON
–	200	OFF	OFF	OFF	ON	OFF	OFF	ON	ON
–	201	ON	OFF	OFF	ON	OFF	OFF	ON	ON
–	202	OFF	ON	OFF	ON	OFF	OFF	ON	ON
–	203	ON	ON	OFF	ON	OFF	OFF	ON	ON
–	204	OFF	OFF	ON	ON	OFF	OFF	ON	ON
–	205	ON	OFF	ON	ON	OFF	OFF	ON	ON
–	206	OFF	ON	ON	ON	OFF	OFF	ON	ON
–	207	ON	ON	ON	ON	OFF	OFF	ON	ON
–	208	OFF	OFF	OFF	OFF	ON	OFF	ON	ON
–	209	ON	OFF	OFF	OFF	ON	OFF	ON	ON
–	210	OFF	ON	OFF	OFF	ON	OFF	ON	ON
–	211	ON	ON	OFF	OFF	ON	OFF	ON	ON
–	212	OFF	OFF	ON	OFF	ON	OFF	ON	ON
–	213	ON	OFF	ON	OFF	ON	OFF	ON	ON
–	214	OFF	ON	ON	OFF	ON	OFF	ON	ON
–	215	ON	ON	ON	OFF	ON	OFF	ON	ON
–	216	OFF	OFF	OFF	ON	ON	OFF	ON	ON
–	217	ON	OFF	OFF	ON	ON	OFF	ON	ON
–	218	OFF	ON	OFF	ON	ON	OFF	ON	ON
–	219	ON	ON	OFF	ON	ON	OFF	ON	ON
–	220	OFF	OFF	ON	ON	ON	OFF	ON	ON
–	221	ON	OFF	ON	ON	ON	OFF	ON	ON
–	222	OFF	ON	ON	ON	ON	OFF	ON	ON
–	223	ON	ON	ON	ON	ON	OFF	ON	ON
–	224	OFF	OFF	OFF	OFF	OFF	ON	ON	ON
–	225	ON	OFF	OFF	OFF	OFF	ON	ON	ON
–	226	OFF	ON	OFF	OFF	OFF	ON	ON	ON
–	227	ON	ON	OFF	OFF	OFF	ON	ON	ON
–	228	OFF	OFF	ON	OFF	OFF	ON	ON	ON
–	229	ON	OFF	ON	OFF	OFF	ON	ON	ON
–	230	OFF	ON	ON	OFF	OFF	ON	ON	ON
–	231	ON	ON	ON	OFF	OFF	ON	ON	ON

Receiver Address		Switch Setting							
P-Type Control	D-Type Control	SW2-1	SW2-2	SW2-3	SW2-4	SW2-5	SW2-6	SW2-7	SW2-8
–	232	OFF	OFF	OFF	ON	OFF	ON	ON	ON
–	233	ON	OFF	OFF	ON	OFF	ON	ON	ON
–	234	OFF	ON	OFF	ON	OFF	ON	ON	ON
–	235	ON	ON	OFF	ON	OFF	ON	ON	ON
–	236	OFF	OFF	ON	ON	OFF	ON	ON	ON
–	237	ON	OFF	ON	ON	OFF	ON	ON	ON
–	238	OFF	ON	ON	ON	OFF	ON	ON	ON
–	239	ON	ON	ON	ON	OFF	ON	ON	ON
–	240	OFF	OFF	OFF	OFF	ON	ON	ON	ON
–	241	ON	OFF	OFF	OFF	ON	ON	ON	ON
–	242	OFF	ON	OFF	OFF	ON	ON	ON	ON
–	243	ON	ON	OFF	OFF	ON	ON	ON	ON

Table C. Switch Settings for SW2 *(Continued)*

Receiver Address		Switch Setting							
P-Type Control	D-Type Control	SW2-1	SW2-2	SW2-3	SW2-4	SW2-5	SW2-6	SW2-7	SW2-8
–	244	OFF	OFF	ON	OFF	ON	ON	ON	ON
–	245	ON	OFF	ON	OFF	ON	ON	ON	ON
–	246	OFF	ON	ON	OFF	ON	ON	ON	ON
–	247	ON	ON	ON	OFF	ON	ON	ON	ON
–	248	OFF	OFF	OFF	ON	ON	ON	ON	ON
–	249	ON	OFF	OFF	ON	ON	ON	ON	ON
–	250	OFF	ON	OFF	ON	ON	ON	ON	ON
–	251	ON	ON	OFF	ON	ON	ON	ON	ON
–	252	OFF	OFF	ON	ON	ON	ON	ON	ON
–	253	ON	OFF	ON	ON	ON	ON	ON	ON
–	254	OFF	ON	ON	ON	ON	ON	ON	ON
–	255	ON	ON	ON	ON	ON	ON	ON	ON

Specifications

ELECTRICAL

Input Voltage	24, 120, or 230 VAC, 50/60 Hz; switch selectable for 120/230 VAC inputs. Reset feature enabled when power becomes unstable or interrupted.
Power Requirements	Maximum power consumption is 70 VA per system
Window Heater	Consumes 10 W when active, electronically controlled.
Electrical Connections	2 power source connections made at mount location with wire splices and 1 ground wire splice; 1 BNC receptacle and 4 wire splices at mount location for Pelco D and Pelco P protocols (RS-422); 2 wire splices for open collector auxiliary output
Aux 2	Open collector output with 2-second activation; connected relay must require no more than 32 VDC and 40 mA to energize relay coil; wire length between Esprit and relay must be less than 100 ft (30 m)

MECHANICAL

Construction
System	Die-cast, extruded, and sheet aluminum; stainless steel hardware
EWM Wall Mount	Aluminum
EPA Pedestal Adapter	Aluminum

Finish
System	Gray polyester powder coat
EWM Wall Mount	Gray polyester powder coat
EPA Pedestal Adapter	Gray polyester powder coat

Viewing Window	0.12-inch (3.0 mm) thick, germanium with scratch resistant diamond-like carbon coating
Window Viewing Area	1.7-inch (4.3 cm) diameter
Operating Temperature	-40° to 131°F (-40° to 55°C) for sustained system operation or 140°F (60°C) absolute maximum. Within two hours of power up, the entire unit can de-ice and be operational from a temperature of -13°F (-25°C).
Operating Environment	Will remain operational in 90 mph wind conditions; withstands 130 mph.
Dimensions	See dimension drawing

Unit Weight (with Camera Module)
With Pedestal Adapter	20 lb (9.0 kg)
With Wall Mount	22 lb (9.9 kg)
Ratings	Meets the following standards: NEMA Type 4X (pan/tilt and enclosure) IP66 (pan/tilt and enclosure)

CAMERAS

Image Sensor	320 (H) x 240 (V)
Pixel Size	38 micrometers
Spectral Response	7.5 to 13.5 micrometers
Noise Equivalent Delta of Temperature (NEdT)	<85 µK @ f/1.6 <35 µK @ f/1.0 equivalent

Lens Options
ES3014TI	14.25 mm, 50° horizontal field of view, f/1.3
ES3035TI	35 mm, 20° horizontal field of view, f/1.4
ES3050TI	50 mm, 14° horizontal field of view, f2.0

Zoom Ratio	2X digital zoom
Video Output	1 Vp-p, 75 ohms
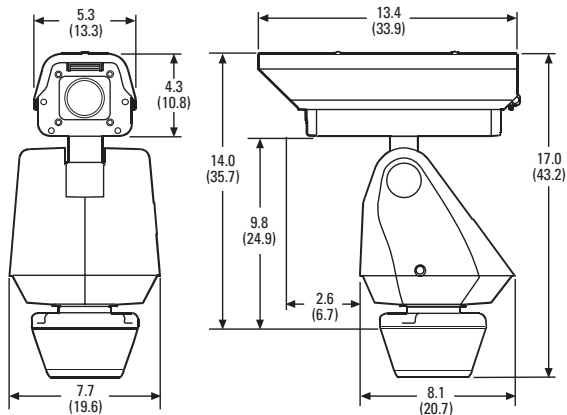
(Design and product specifications subject to change without notice.)

NOTE: VALUES IN PARENTHESES ARE CENTIMETERS; ALL OTHERS ARE INCHES.

PRODUCT WARRANTY AND RETURN INFORMATION

WARRANTY

Pelco will repair or replace, without charge, any merchandise proved defective in material or workmanship **for a period of one year** after the date of shipment.

Exceptions to this warranty are as noted below:

- Five years on fiber optic products and TW3000 Series unshielded twisted pair transmission products.
- Three years on Spectra® IV products.
- Three years on Genex® Series products (multiplexers, server, and keyboard).
- Three years on Camclosure® and fixed camera models, except the CC3701H-2, CC3701H-2X, CC3751H-2, CC3651H-2X, MC3651H-2, and MC3651H-2X camera models, which have a five-year warranty.
- Three years on PMCL200/300/400 Series LCD monitors.
- Two years on standard motorized or fixed focal length lenses.
- Two years on Legacy®, CM6700/CM6800/CM9700 Series matrix, and DF5/DF8 Series fixed dome products.
- Two years on Spectra III™, Esprit®, ExSite®, and PS20 scanners, including when used in continuous motion applications.
- Two years on Esprit and WW5700 Series window wiper (excluding wiper blades).
- Two years (except lamp and color wheel) on Digital Light Processing (DLP®) displays. The lamp and color wheel will be covered for a period of 90 days. The air filter is not covered under warranty.
- Eighteen months on DX Series digital video recorders, NVR300 Series network video recorders, and Endura™ Series distributed network-based video products.
- One year (except video heads) on video cassette recorders (VCRs). Video heads will be covered for a period of six months.
- Six months on all pan and tilts, scanners or preset lenses used in continuous motion applications (that is, preset scan, tour and auto scan modes).

Pelco will warrant all replacement parts and repairs for 90 days from the date of Pelco shipment. All goods requiring warranty repair shall be sent freight prepaid to Pelco, Clovis, California. Repairs made necessary by reason of misuse, alteration, normal wear, or accident are not covered under this warranty.

Pelco assumes no risk and shall be subject to no liability for damages or loss resulting from the specific use or application made of the Products. Pelco's liability for any claim, whether based on breach of contract, negligence, infringement of any rights of any party or product liability, relating to the Products shall not exceed the price paid by the Dealer to Pelco for such Products. In no event will Pelco be liable for any special, incidental or consequential damages (including loss of use, loss of profit and claims of third parties) however caused, whether by the negligence of Pelco or otherwise.

The above warranty provides the Dealer with specific legal rights. The Dealer may also have additional rights, which are subject to variation from state to state.

If a warranty repair is required, the Dealer must contact Pelco at (800) 289-9100 or (559) 292-1981 to obtain a Repair Authorization number (RA), and provide the following information:

1. Model and serial number
2. Date of shipment, P.O. number, Sales Order number, or Pelco invoice number
3. Details of the defect or problem

If there is a dispute regarding the warranty of a product which does not fall under the warranty conditions stated above, please include a written explanation with the product when returned.

Method of return shipment shall be the same or equal to the method by which the item was received by Pelco.

RETURNS

In order to expedite parts returned to the factory for repair or credit, please call the factory at (800) 289-9100 or (559) 292-1981 to obtain an authorization number (CA number if returned for credit, and RA number if returned for repair).

All merchandise returned for credit may be subject to a 20% restocking and refurbishing charge.

Goods returned for repair or credit should be clearly identified with the assigned CA or RA number and freight should be prepaid. Ship to the appropriate address below.

If you are located within the continental U.S., Alaska, Hawaii or Puerto Rico, send goods to:

Service Department
Pelco
3500 Pelco Way
Clovis, CA 93612-5699

If you are located outside the continental U.S., Alaska, Hawaii or Puerto Rico and are instructed to return goods to the USA, you may do one of the following:

If the goods are to be sent by a COURIER SERVICE, send the goods to:

Pelco
3500 Pelco Way
Clovis, CA 93612-5699 USA

If the goods are to be sent by a FREIGHT FORWARDER, send the goods to:

Pelco c/o Expeditors
473 Eccles Avenue
South San Francisco, CA 94080 USA
Phone: 650-737-1700
Fax: 650-737-0933

⊠Green   The materials used in the manufacture of this document and its components are compliant to the requirements of Directive 2002/95/EC.

This equipment contains electrical or electronic components that must be recycled properly to comply with Directive 2002/96/EC of the European Union regarding the disposal of waste electrical and electronic equipment (WEEE). Contact your local dealer for procedures for recycling this equipment.

REVISION HISTORY

Manual #	Date	Comments
C1307M	10/06	Original version.
C1307M-A	11/06	Added feature to save Custom 1 and Custom 2 profiles.
C1307M-B	2/07	Corrected typos. Updated links to palettes manual.
C1307M-C	8/07	Added the following to the models table: ES3014TI-2N-1, ES3014TI-5N-1, ES3014TI-2W-1, ES3014TI-5W-1, ES3035TI-2N-1, ES3035TI-5N-1, ES3035TI-2W-1, ES3035TI-5W-1, ES3050TI-2N-1, ES3050TI-5N-1, ES3050TI-2W-1, ES3050TI-5W-1